

Damodar Valley Corporation

(Established by the ACT XIV of 1948)



BIDDING DOCUMENTS

FOR

EPC PACKAGE

FOR

**KODERMA THERMAL POWER STATION PHASE-II
(2x800MW)**

SECTION - I, II, III, IV, V & VII

**BIDDING DOCUMENT NO. : DVC/C&M/Engineering/KTPS(2X800
MW)/EPC/IPHB**

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(2x800MW)**

SECTION - I, II, III, IV, V & VII

**COMMON BIDDING DOCUMENT NO. :
DVC/C&M/Engineering/KTPS(2X800 MW)/EPC/IPHB**

(This document is meant for the exclusive purpose of bidding against this Bid Document No. / Specification and shall not be transferred, reproduced or otherwise used for purposes other than that for which it is specifically issued).

**BIDDING DOCUMENTS
FOR
EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO. : DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

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1. (i) Bid Form (Techno-Commercial Bid) along with Attachments [enclosed as Section-VII, Book 1 of 3]
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Book 3 of 3 consisting of the following:

Book 3 of 3 [Part 1]

2. Bid Security Form - Bank Guarantee
- 2a. Bid Security Form Letter of Credit
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6. Performance Security Forms
- 6a. Performance Security Form for Phased Manufacturing Programme (PMP)
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7. (ii) Bank Guarantee Form for Advance Payment

(Installation Services / Civil / Structural Works)

8. Form of Completion Certificate
9. Form of Operational Acceptance Certificate
10. Form of Trust Receipt
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12. Form of Authorization Letter
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14. Form of Bank Guarantee by Executants of DJUs other than Contractor
15. Form of Bank Guarantee Verification Check List
16. Form of Validity Extension of Bank Guarantee
17. Form of Indemnity-Cum-Undertaking Agreement (Removal/Disposal of Scrap/Surplus Material)
18. Form of Contract Closing Certificates
19. Electronic Fund Transfer Form
20. Deleted
21. Declaration Of Absence Of Conflict Of Interest With INDEPENDENT ENGINEER (IE)- **Not Applicable**
22. Deleted

Acronyms

BDS	Bid Data Sheet
CIF	Cost, Insurance and Freight
CIP	Carriage and Insurance paid to (place)
CPM	Critical Path Method
EDI	Electronic Data Interchange
EXW	Ex factory, ex works or ex warehouse
FCA	Free Carrier
FOB	Free on Board
FOR	Free on Rail / Road
FP	Forms & Procedures
GCC	General Conditions of Contract
ICC	International Chamber of Commerce
IFB	Invitation for Bids
ITB	Instructions to Bidders
SCC	Special Conditions of Contract
TS	Technical Specifications and Drawings
UNCITRAL	United Nations Commission on International Trade Law
INCOTERMS	International Commercial Terms

Note: The terms ExW, CIF, etc. shall be governed by the rules prescribed in the current edition of INCOTERMS, published by the international chambers of commerce, Paris, France.

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SECTION - I

INVITATION FOR BIDS (IFB)

INVITATION FOR BIDS (IFB)
FOR
EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2X800 MW)
LOCATED AT
KODERMA DISTRICT OF JHARKHAND.
(International Competitive Bidding)

IFB No.: 2023_DVC_172492

Bidding Document No.: DVC/C&M/Engineering/KTPS (2X800 MW)/EPC/IPHB Date: 30.10.2023

- A.** Damodar Valley Corporation (DVC) invites bid from eligible bidders on e-Tendering mode on **Single Stage Three Envelope Bidding Basis** for aforesaid package as per the brief Scope of Work mentioned hereinafter.
- B. BRIEF SCOPE OF WORK**

The Brief scope of work for the subject EPC Package for KODERMA TPS PH-II (2X800 MW) is as follows:

Design, Engineering, Manufacture, Supply, Construction, Erection, Testing & Commissioning works for the EPC Package for KODERMA THERMAL POWER STATION PH-II (2X800 MW) on the basis of single point responsibility, completely covering the following activities and services in respect of Steam Generator and Auxiliaries, Electrostatic Precipitator, Flue Gas Desulphurization (FGD) System, Biomass co-firing capability, Steam Turbine & Auxiliaries, Generator & Auxiliaries, Generator Bus ducts and associated equipments, ECW system for TG & SG including station auxiliaries, Condensate polishing plant (CPU), CST, CW system including equipment, Duct, IDCT & CW channel and associated civil works, Raw Water system and associated Electrical & civil works, Water treatment plant and associated civil works including Effluent quality Monitoring System(EQMS), Ash Handling & disposal System, Coal and Biomass Handling Plant, Limestone & Gypsum Handling Plant, Mill Reject Handling System, Compressed Air (instrument & service air) System, Fire Detection & Protection System, Air Conditioning & Ventilation Systems for all buildings under the Bidder's scope of work, Power cycle & Station Piping, Power Transformers, HT Switchgears for complete plant facilities, Transformer Yard and associated controls & Instrumentation, LT indoor Transformer, MV Bus-duct, DC Batteries, Battery chargers, DG sets, LT switchgear & LT Bus Duct, Outdoor Transformers, Switchyard, HT & LT power cables, LT control cables, Lightning Protection, DG sets for FGD, Lighting, Cabling, Earthing, all Control & Instrumentation(C&I), Fireproof cable penetration sealing system, Pipe / Cable racks, Solar PV plant on roof tops of buildings, Civil, Structural & Architectural works of Main Power House, Common Control Room, Chimney with elevator, earthing mat/ grounding for the Offsite areas, Miscellaneous Buildings and other civil works including Site

Levelling, Roads & Drains, underground facilities like drainage, sewerage, trenches, Packaged sewerage treatment plant, Rain Water Harvesting, etc covered under the specifications:

- (a) Basic Engineering of the plant including preparation of Plant Definition Manuals;
- (b) Detailed design of all the equipment and equipment system(s) including civil, structure steel & Architectural works included in bidder's scope.
- (c) Providing engineering drawings, equipment sizing & performance data, instruction manuals, as built drawings and other information;
- (d) Compliance with statutory requirements and obtaining clearances from statutory authorities, wherever required;
- (e) Complete manufacturing including shop testing/type testing;
- (f) The complete Civil, structural and architectural works
- (g) Packing and transportation from the manufacturer's works to the site including logistic studies, insurance, customs clearance & port clearance, port charges, if any.
- (h) Receipt, storage, preservation, handling and conservation of equipment at the site;
- (i) Fabrication, pre-assembly, if any, erection, insurance, testing, commissioning and completion of facilities including putting into satisfactory operation all the equipment including successful completion of initial operation;
- (j) Performance and guarantee tests along with initial operation;
- (k) Supply of spares on FOR site basis;
- (l) Reconciliation with Customs Authorities;
- (m) Satisfactory conclusion of the Contract;
- (n) Insurance and other requirements
- (o) The plant shall be ZLD compliant

Detailed scope of work has been specified in the bidding documents.

- C. DVC intends to finance the aforesaid Package through Term Loan from Banks and/or FIs/ECB/World Bank/ADB etc./issue of long-term bonds
- D. **Only Class-I local suppliers are eligible to Bid. Bids received (if any) from Class-II Local Supplier / Non Local Supplier shall be out rightly rejected.**
- E. Detailed specification, scope of work and terms & conditions are given in the Bidding Documents, which are available for examination and sale at the address given below and as per the following schedule:

Issue of Abridged IFB	30.05.2023
Bidding Document No	DVC/C&M/Engineering/KTPS (2X800 MW)/EPC/IPHB
Start of Documents download Date	30.10.2023
Date for Pre-Bid conference	10.11.2023

Last date for receipt of queries from bidders (if any)*	13.11.2023 upto 1700 Hrs (IST)
Bid receipt date ["Submission of hard copy documents for Techno- commercial Bid in Envelope-I - Offline " , "Uploading of 'Envelope-II (Techno- commercial Bid)' - Online " and "Uploading of 'Envelope-III (Price Bid) in Template Format' - Online "]	20.11.2023 upto 1500 Hrs (IST)
Bid Opening Date & Time for Envelope-I and Envelope-II (Techno–Commercial) bid " online "	21.11.2023 at 1530 Hrs (IST)
Cost of Bidding Document (Non–refundable)	Rs. 35,000/- (Indian Rupees Thirty-Five Thousand Only) for Indian Bidders or USD 418 (USD Four Hundred Eighteen Only) for Foreign Bidders inclusive of GST as applicable.
Bid Opening Date & Time for Envelope-III (Price) bid in Template Format	Shall be intimated after opening of Envelope-I & II (Techno-Commercial) Bids.

*No Queries from Bidders, whatsoever, shall be entertained by the Employer beyond the last date of receipt of Queries/ Pre-Bid Conference as specified above.

The details are available at CPP Portal (Central public Procurement Portal) <https://etenders.gov.in/eprocure/app> and in www.dvc.gov.in (For information only). Any addendum/corrigendum /extension, if required, pertaining to this NIT will be hosted in <https://etenders.gov.in/eprocure/app> only. Bidders are requested to visit website <https://etenders.gov.in/eprocure/app> regularly for any addendum/corrigendum/ extension till opening of the Bids.

- F.** All bids must be accompanied by Bid Security for an amount of **INR 90,76,54,760/- (Indian Rupees Ninety Crores Seventy-Six Lacs Fifty-Four Thousand Seven Sixty Only)** or **USD 10,826,034 (Ten Million Eight Hundred Twenty-Six Thousand and Thirty-Four US Dollars)** in the form as stipulated in the Bidding Documents.

ANY BID NOT ACCOMPANIED BY AN ACCEPTABLE BID SECURITY IN A SEPARATE SEALED ENVELOPE SHALL BE REJECTED BY THE EMPLOYER AS BEING NON-RESPONSIVE. IN CASE, THE BID SECURITY IS SUBMITTED THROUGH ELECTRONIC FUND TRANSFER (EFT), Bidder to submit Proof of e-payment of Bid Security in separate envelope within the Envelope-I (hard copy documents) alongwith uploading of same in the e-tendering portal.

- G. Qualifying Requirements for Bidders (QR):**

Qualifying Requirement (QR) for subject package is Attached as **Appendix-1**

- H.** DVC reserves the right to reject any or all bids or cancel/ withdraw the Invitation for Bids or delete any of the Projects under subject IFB without assigning any reason whatsoever and in such case no bidder / intending bidder shall have any claim arising out of such action.

- I. A complete set of Bidding Documents may be downloaded by any interested Bidder from the website <https://etenders.gov.in/eprocure/app>. The tender is invited through Government e-procurement system of NIC (Ge PNIC) under Central Public Procurement Portal (CPPP) (URL: <https://etenders.gov.in/eprocure/app>).

Valid Digital Signature Certificate (DSC of Class 3 category) is mandatory to participate in e-tendering under CPP Portal (URL: <https://etenders.gov.in/eprocure/app>). The certificate may be obtained from any of the authorised agencies of CCA (Controller of Certifying Authorities)] on Bidder's own cost.

Bidders are advised to go through "Special Instructions to the Contractors/Bidders for the e-submission of the bids online through this e-Procurement Portal", "Information about DSC", "Bidders Manual Kit", "Site compatibility" & "FAQ" links available on the login page of the e-Tender portal for guidelines, bidder enrolment, procedures for downloading of Tender Documents & uploading of Bids and system requirements. In case of any technical difficulty, Bidders may contact the help desk numbers & e-mail IDs mentioned at the e-tender portal.

The instructions given below are meant to assist the bidders in registering on the CPP Portal:-

- a) Bidders are required to register in the Government e-procurement portal, obtain 'Login ID' & 'Password' and go through the instructions available in the Home page after log in to the CPP Portal (URL: <https://etenders.gov.in/eprocure/app>), by clicking on the link "Online bidder Enrolment" on the CPP Portal which is free of charge.
- b) As part of the enrolment process, the bidders will be required to choose a unique user name and assign a password for their accounts.
- c) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- d) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate issued by any Certifying Authority recognized by CCA India with their profile.
- e) Bidder then logs in to the site through the secured log-in by entering their user ID/password and the password of the DSC/ e-Token.
- f) The Bidder intending to participate in the bid is required to register in the e-tender portal using his/her Login ID and attach his/her valid Digital Signature Certificate (DSC) to his/her unique Login ID. He/she have to submit the relevant information as asked for about the firm/contractor. The bidders, who submit their bids for this tender after digitally signing using their Digital Signature Certificate (DSC), accept that they have clearly understood and agreed the terms and conditions including all the Forms/Annexure of this tender.

More information useful for submitting online bids on the CPP Portal may be obtained at: <https://etenders.gov.in/eprocure/app>.

For clarification about e-tendering procedures, downloading & Uploading and further details / elaboration, the bidders are advised to contact the following FMP Support Persons, representatives of **M/s. National Informatics Centre Services Incorporated (NICS)**, available in Help Desk at DVC Towers, C&M Department, 3rd Floor, Kolkata-54, West Bengal, India during the office hours:-

- (i) Mr. Sk Nawajesh Rahman, e-mail: rnawajesh@gmail.com (Contact No. 9831683690)
- (ii) Miss Armistha Kangsa Banik, e-mail: armistha.banik1989@gmail.com (Contact No.: 8240124812).

Bidder have to pay the Cost of the Tender documents (non-refundable) as mentioned in Para E above only in the form as specified in Sec-II (ITB) of Bidding Documents.

DVC shall not be responsible in any way for any delay/ difficulties/ inaccessibility of the downloading or uploading facility from the website for any reason whatsoever.

Downloading of Tender Documents by any Bidder shall not construe that such Bidder is considered to be qualified. Transfer of Tender Documents downloaded by one intending bidder to another is not permissible.

In case of any discrepancies found between the downloaded tender documents from the website and the master copy available in the website <https://etenders.gov.in/eprocure/app>, the later shall prevail and will be binding on the tenderer(s). No claim/appeal on this account will be entertained or given cognizance.

- J.** Any 'Bidder (including its Collaborator/Associate/DJU Partner/JV partner/Consortium Member/Assignee, wherever applicable) from a country which shares a land border with India', as specified in the Bidding Documents, will be eligible to bid in this tender only if bidder is registered with the Competent Authority as mentioned in the Bidding Documents.

Further, any bidder (including bidder from India) having specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India, will be eligible to bid only if the bidder is registered with the same competent authority. However, the said requirement of registration will not apply to bidders from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects.

- K.** Issuance of Bid Documents to any Bidder shall not construe that such Bidder is considered to be qualified. Bids shall be submitted and opened at the address given below in the presence of Bidder's representatives who choose to attend the bid opening.

- L.** Transfer of Bidding Documents purchased by one intending Bidder to another is not permissible.

- M. Address for Communication:**

General Manager,
C&M Department, 3rd Floor,
DVC Towers, VIP Road,
Kolkata, West Bengal,
India, PIN – 700054

E-mail: amitava.maity@dvc.gov.in

Mobile No. +91 8335037065

Websites: <https://etenders.gov.in/eprocure/app/> or www.dvc.gov.in

- N. Registered Office**

Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
DVC Towers,
VIP Road,
Kolkata- 700054, India

APPROVED QR FOR EPC PACKAGE FOR KTPS PH-II (2X800 MW)

1.0.0 The Bidder should meet the qualifying requirements of any one of the qualifying routes stipulated under clause 1.1.0 or 1.2.0 or 1.3.0 or 1.4.0 or 1.5.0 or 1.6.0 or 1.7.0. In addition, the Bidder should also meet the requirements stipulated under clause 2.0.0, 3.0.0, 4.0.0 & 5.0.0 together with the requirements stipulated under section ITB.

1.1.0 Route 1: Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer

1.1.1(A) The Bidder should have designed, engineered, manufactured/got manufactured, erected/supervised erection, commissioned/supervised commissioning of at least one (1) number of pulverized coal fired supercritical Steam Generator having rated capacity of 1500 tonnes of steam per hour or higher. Further, such Steam generator should be of the type specified, i.e. single pass (tower type) or two pass type using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing, and should have been in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening. In addition, the above Steam Generator should have been provided with evaporator suitable for variable pressure operation (sub-critical and super-critical pressure ranges). The Bidder shall offer only the type of Steam Generator and type of water wall tubing for which he is qualified.

AND/OR

1.1.1(B) The Bidder should have designed, engineered, manufactured / got manufactured, erected / supervised erection, commissioned / supervised commissioning of (i) at least one (1) number supercritical steam turbine of tandem compound, condensing, reheat type of 500 MW or higher capacity with main steam pressure, of 225 Kg/cm² (gauge) or higher and main steam / reheat temperature of 565 °C / 565 °C or higher and (ii) at least one (1) number of generator of two pole, Thermal class 155(F) winding insulation, hydrogen / water cooled stator and hydrogen / water cooled rotor of 500MW or above capacity. These steam turbine and generator should have been in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening.

1.1.2 The Bidder should have registered in India under the Companies Act of India, either a Subsidiary Company or a Joint Venture (JV) Company for manufacturing of supercritical steam generator sets and/or supercritical steam turbine generator sets for which it is qualified.

(a) In case the Bidder has formed a Subsidiary Company then the Subsidiary Company of the Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer should have been registered in India under the Companies Act of India for manufacturing supercritical steam generator and/or supercritical steam turbine generator sets covering the type, size and rating specified as on the date of techno-commercial bid opening. If the Subsidiary Company is registered as a public limited Company then it should have obtained certificate for Commencement of Business in India as on the date of techno-commercial bid opening.

The Subsidiary Company shall remain a subsidiary Company of the Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer for a minimum period of 7 years from the date of incorporation of such Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

(b) In case the Bidder has formed a JV Company then, the Joint Venture (JV) Company should have been incorporated in India under the Companies Act of India, as on the date of techno-commercial bid opening and promoted by (i) an Indian Company registered in India under the Companies Act of India and (ii) a Qualified Steam

Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer, for the purpose of manufacturing supercritical steam generator and/or supercritical steam turbine generator sets covering the type, size and rating specified. If the JV Company is incorporated as a public limited Company then it should have obtained certificate for Commencement of Business in India as on the date of techno-commercial bid opening.

The Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer shall maintain a minimum equity participation of 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

One of the promoters shall be a majority stakeholder who shall maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

- (c) In case the Bidder meets the requirements indicated at 1.1.1(A)/(B) and 1.1.2(a)/(b) for either steam Generator sets or steam turbine generator sets (and not for both) then the Bidder shall associate/ collaborate for the other equipment with either of the following and shall source the equipment i.e. steam turbine generator set or steam generator set, only from such qualified associate.

(i) Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) or 1.1.1(A) above as the case may be along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the respective equipment

Or

(ii) Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1(a) in conjunction with 1.4.3 (if applicable) as the case may be along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iii) Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator and/or supercritical Steam turbine Generator (as the case may be) and 3.0.0 for the respective equipment.

- 1.1.3 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

DJU	Executants	BG
For Steam Generator	The Bidder	-----
	Indian Subsidiary / JV Company for steam Generator	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for steam Generator	0.15%
	QSGM (applicable if other than bidder)	0.3%
For Steam Generator (if the Steam Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator	The Bidder	-----
	QSTGM (applicable if other than bidder)	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator	0.15%

DJU	Executants	BG
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Turbine Generator	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (if the Steam turbine Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Project Management If applicable as per clause 4.1.0	The Bidder	-----
	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

1.1.4 A super critical steam turbine manufacturer who meets the requirements of clause 1.1.1(B) except for generator would also qualify provided the Subsidiary Company / JV Company (as the case may be) associates and have a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator, hereinafter referred to as Qualified Generator Manufacturer.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian Subsidiary Company or the JV Company (as the case may be), for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary Company or JV Company (as the case may be) or up to the end of defect liability period of the contract whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.1.3 above.

1.2.0 NOT USED

1.2.1 NOT USED

1.2.2 NOT USED

1.2.3 NOT USED

Route 1.2.0 has not been used for the purpose of qualification in these Qualifying Requirements. Wherever Clause 1.2.0, 1.2.1, 1.2.2 & 1.2.3 have been referred to either directly or indirectly in any qualification routes / financial criteria, the same should be deemed to have been omitted and qualifying requirements should be read accordingly.

1.3.0 Route 3: Indian Subsidiary Company of a Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer

1.3.1(a) The Bidder shall be an Indian Subsidiary Company of a Qualified Steam Generator Manufacturer and/or a Qualified Steam Turbine Generator Manufacturer meeting requirements of clause 1.1.1(A) and/or 1.1.1(B) (as the case may be), registered in India under the Companies Act of India, as on the date of techno-commercial bid opening, for manufacturing supercritical steam generator and/or supercritical Steam Turbine Generator sets covering the type, size and rating specified. If the Subsidiary Company is incorporated as a public limited Company then it should have obtained certificate for Commencement of Business in India as on the date of techno-commercial bid opening.

The Subsidiary Company shall remain a subsidiary Company of the Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer for a minimum period of 7 years from the date of incorporation of such Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

(b) In case the Bidder meets the requirements indicated at 1.3.1(a) for either steam Generator sets or steam turbine generator sets (and not for both) then the Bidder shall associate/ collaborate for the other equipment with either of the following and shall source the equipment i.e. steam turbine generator set or steam generator set, only from such qualified associate.

(i) Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) or 1.1.1(A) above as the case may be along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the respective equipment

Or

(ii) Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1(a) in conjunction with 1.4.3 (if applicable) as the case may be along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iii) Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator and/or supercritical Steam turbine Generator (as the case may be) and 3.0.0 for the respective equipment.

1.3.2 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

DJU	Executants	BG
For Steam Generator	The Bidder	-----
	QSGM	0.3%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Generator	0.15%
	Indian Subsidiary Company / JV Company for Steam Generator (applicable if other than bidder)	0.15%
For Steam Generator (if the Steam Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator	The Bidder	-----
	QSTGM	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator (applicable if other than bidder)	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Turbine Generator	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (if the Steam turbine Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Project Management If applicable as per clause 4.1.0	The Bidder	-----
	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder		

DJU	Executants	BG
shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

- 1.3.3 In case the Bidder is an Indian Subsidiary Company of a super critical steam turbine manufacturer as its promoter meeting the requirements of clause 1.1.1(B) except for generator or if the Bidder's associate is supercritical steam turbine manufacturer meeting the requirements of clause 1.1.1(B) except for generator would also qualify provided the Subsidiary Company / JV Company of the supercritical steam turbine generator manufacturer associates and has a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian Subsidiary Company / JV Company for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary Company /JV Company or up to the end of defect liability period of the contract, whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.3.2 above.

- 1.4.0 **Route 4: Indian Joint Venture (JV) Company for manufacturing of Super Critical Steam Generator and/or Super Critical Steam Turbine Generator in India between an Indian Company and a Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer**

- 1.4.1(a) The Bidder shall be a Joint Venture (JV) Company incorporated in India under the Companies Act of India, as on the date of techno-commercial bid opening, promoted by (i) an Indian Company registered in India under the Companies Act of India and (ii) a Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer meeting requirements of clause 1.1.1(A) and/or 1.1.1(B) (as the case may be), created for the purpose of manufacturing in India supercritical steam generator and/or supercritical steam turbine generator sets covering the type, size and rating specified. If the JV Company is incorporated as a public limited Company then it should have obtained certificate for Commencement of Business in India as on the date of techno-commercial bid opening.

The Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer shall maintain a minimum equity participation of 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

One of the promoters shall be a majority stakeholder who shall maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

In the event that the majority stake holder in the JV Company is an entity other than the Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer, it should be an Indian Company and should have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10000 million or more. At least one of such projects should have a contract value of INR 4000 million or more. These projects shall be in successful operation for a period of not less than one year prior to the date of techno-commercial bid opening.

(b) In case the Bidder meets the requirements indicated at 1.4.1(a) for either steam Generator sets or steam turbine generator sets (and not for both) then the Bidder shall associate/ collaborate for the other equipment with either of the following and shall source the equipment i.e. steam turbine generator set or steam generator set, only from such qualified associate.

(i) Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) or 1.1.1(A) above as the case may be along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the respective equipment

Or

(ii) Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1(a) in conjunction with 1.4.3 (if applicable) as the case may be along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iii) Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator and/or supercritical Steam turbine Generator (as the case may be) and 3.0.0 for the respective equipment.

1.4.2 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

DJU	Executants	BG
Steam Generator	The Bidder	----
	QSGM	0.3%
	Other promoter having 25% or higher equity participation in Indian Subsidiary/ JV Company for Steam Generator	0.15%
	Indian Subsidiary/ JV Company for Steam Generator (applicable if other than bidder)	0.15%
For Steam Generator (if the Steam Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator	The Bidder	-----
	QSTGM	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator (applicable if other than bidder)	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Turbine Generator	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (if the Steam turbine Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Project Management If	The Bidder	-----

DJU	Executants	BG
applicable as per clause 4.1.0	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

- 1.4.3 In case the Bidder is an Indian Joint Venture Company with a super critical steam turbine manufacturer as one of the promoters meeting the requirements of clause 1.1.1(B) except for generator or if the Bidder's associate is supercritical steam turbine manufacturer meeting the requirements of clause 1.1.1(B) except for generator would also qualify provided the JV Company/ Subsidiary Company of the super critical steam turbine generator manufacturer associates and have a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian JV Company / Subsidiary Company, for a lock-in period of 7 years from the date of incorporation of the Indian JV Company / Subsidiary Company or up to the end of defect liability period of the contract whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.4.2 above.

- 1.5.0 **Route 5: Indian Company who holds at least 51% equity in a Joint Venture Company for manufacturing Super Critical Steam Generator and/or supercritical Steam Turbine Generator sets in India between an Indian Company and a Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer**

- 1.5.1(a) The Bidder shall be Indian Company who holds majority stake in a Joint Venture Company incorporated in India under the Companies Act of India as on the date of techno-commercial bid opening, promoted by (i) a Company registered in India under the Companies Act of India and (ii) a Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer meeting requirements of clause 1.1.1(A) and/or 1.1.1(B) (as the case may be),

created for the purpose of manufacturing supercritical steam generator and/or supercritical steam turbine generator sets in India, covering the type, size and rating specified. If the JV Company is incorporated as a public limited Company then it should have obtained certificate for Commencement of Business in India as on the date of techno-commercial bid opening.

The Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer shall maintain a minimum equity participation of 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The Bidder shall maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The Bidder should have executed in the last 10 years industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10000 million or more. At least one of such projects should have a contract value of INR 4000 million or more. These projects shall be in successful operation for a period of not less than one year prior to the date of techno-commercial bid opening.

- (b) In case the Bidder meets the requirements indicated at 1.5.1(a) for either steam Generator sets or steam turbine generator sets (and not for both) then the Bidder shall associate/ collaborate for the other equipment with either of the following and shall source the equipment i.e. steam turbine generator set or steam generator set, only from such qualified associate.

(i) Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) or 1.1.1(A) above as the case may be along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the respective equipment

Or

(ii) Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1(a) in conjunction with 1.4.3 (if applicable) as the case may be along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iii) Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator and/or supercritical Steam turbine Generator (as the case may be) and 3.0.0 for the respective equipment.

- 1.5.2 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

DJU	Executants	BG
For Steam Generator	The Bidder	----
	QSGM	0.3%
	Indian Subsidiary / JV Company For Steam Generator	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary/ JV Company for Steam Generator (applicable if other than bidder)	0.15%
For Steam Generator (if the Steam	The Bidder	-----

DJU	Executants	BG
Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator	The Bidder	-----
	QSTGM	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Turbine Generator (applicable if other than bidder)	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (if the Steam turbine Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Project Management If applicable as per clause 4.1.0	The Bidder	-----
	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

- 1.5.3 In case the Indian Joint Venture Company of the Bidder has a super critical steam turbine manufacturer as one of its promoters, who meets the requirements of clause 1.1.1(B) except for generator or if the Bidder's associate is supercritical steam turbine manufacturer meeting the requirements of clause 1.1.1(B) except for generator would also qualify provided the JV Company/ Subsidiary Company of the supercritical steam turbine generator

manufacturer associates and have a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian JV Company/ Subsidiary Company, for a lock-in period of 7 years from the date of incorporation of the Indian JV Company/ Subsidiary Company or up to the end of defect liability period of the contract whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.5.2 above.

1.6.0 Route 6: Indian Steam Generator and/or Indian Steam Turbine Generator Manufacturer

1.6.1 The bidder should be an Indian manufacturing company which is a supercritical Steam Generator manufacturer and/or a supercritical Steam turbine Generator manufacturer, as the case may be, and meets the following criteria.

Eight (8) Nos. supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be) manufactured/supplied in India by the Indian Subsidiary/JV Company / Indian manufacturing company should be in commercial operation (achieved COD) out of which four (4) such Steam Generators and/or Steam Turbine Generators (as the case may be) should have been in commercial operation for at least one year and Performance Guarantee (PG) Test should have been successfully completed in any two (2) such Steam Generators and/or steam turbine generators (as the case may be) prior to the date of techno-commercial bid opening.

In case any problem related to supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be) & Auxiliaries is encountered during execution of the contract, bidder shall resolve the same within a reasonable time (in the opinion of the owner) by itself/through its collaborator/through firm having competency to resolve such issues. If the problem is not resolved within a reasonable period of time in the opinion of the owner, Owner shall have the option to approach directly to the collaborator/licensor/technology Provider or any other firm to resolve the issue. In such a case the financial expenditure(s) incurred by Owner for resolution of such issues will be to bidder's account. Accordingly, bidder shall be required to submit a letter along with the techno commercial bid valid up to the end of defect liability period of the contract, as per the format enclosed in the bidding documents.

The bidder shall offer only the type of steam generator and the steam turbine generator for which it or its collaborator / associate (as per clause 1.6.2 below) is qualified.

1.6.2(a) In case the Bidder meets the requirements indicated at 1.6.1 above for either steam Generator sets or steam turbine generator sets (and not for both) then the Bidder shall associate/ collaborate for the other equipment with either of the following and shall source the equipment i.e. steam turbine generator sets or steam generator sets, only from such qualified associate.

(i) Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) or 1.1.1(A) above as the case may be along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the respective equipment

Or

(ii) Indian Steam Generator and Steam Turbine Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.2.1 in conjunction with 1.2.3 (as applicable) above along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iii) Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1(a) in conjunction with 1.4.3 (if applicable) as the case may be along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iv) Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator or supercritical Steam turbine Generator (as the case may be) and 3.0.0 for the respective equipment.

(b) The Bidder seeking qualification under (a) above shall furnish Deeds of Joint Undertaking (DJUs) for the respective equipment (as applicable) as per the following table:

DJU	Executants	BG
For Steam Generator (applicable if the Steam Generator is being sourced from the associate as per clause 1.6.2 (a) (i) or 1.6.2 (a) (iii))	The Bidder	----
	QSGM	0.3%
	Other promoter having 25% or higher equity participation in Indian Subsidiary/ JV Company for Steam Generator	0.15%
	Indian Subsidiary/ JV Company for Steam Generator	0.15%
For Steam Generator (applicable if the Steam Generator is being sourced from the associate as per clause 1.6.2 (a) (ii))	The Bidder	----
	QSGM	0.3%
	Indian Steam Generator and Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.2.1 (Applicable if other than bidder)	0.15%
For Steam Generator (applicable if the Steam Generator is being sourced from the associate as per clause 1.6.2 (a) (iv))	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator (applicable if the Steam turbine Generator is being sourced from the associate as per clause 1.6.2 (a) (i) or 1.6.2 (a) (iii))	The Bidder	-----
	QSTGM	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Turbine Generator	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam Turbine Generator (applicable if the Steam turbine Generator is being sourced from the associate as per clause 1.6.2 (a) (ii))	The Bidder	-----
	QSTGM	0.3%
	Indian Steam Generator and Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.2.1 in	0.15%

DJU	Executants	BG
	conjunction with 1.2.3 (as applicable) (Applicable if other than bidder)	
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (applicable if the Steam turbine Generator is being sourced from the associate as per clause 1.6.2 (a) (iv))	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ If the Steam Generators/steam turbine generators are being sourced from the associate as per clause 1.6.2 (a) (ii), then in the Deed of Joint Undertaking the liability of the Qualified Steam Generator manufacturer / Qualified steam turbine generator manufacturer shall be as defined at clause 1.2.2 for the respective equipment as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

1.6.3 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

For Project Management If applicable as per clause 4.1.0	The Bidder	-----
	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

1.6.4 In case the Bidder's associate is supercritical steam turbine manufacturer meeting the requirements of clause 1.1.1(B) except for generator would also qualify provided the JV Company/ Subsidiary Company of the super critical steam turbine generator manufacturer associates and have a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian JV Company / Subsidiary Company, for a lock-in period of 7 years from the date of incorporation of the Indian JV Company / Subsidiary Company or up to the end of defect liability period of the contract whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.6.2 above.

1.7.0 Route 7: Company having experience of 500MW Supercritical units on EPC Basis

1.7.1(a) The Bidder should have executed on Engineering, Procurement and Construction (EPC) basis, minimum one (1) no. 500MW or above pulverized Coal fired Supercritical unit comprising of at least steam generator and steam turbine generator sets along with their associated auxiliary equipments, electrostatic precipitators/bag filters, Switchyard, Coal Handling plant, Ash handling plant, Cooling Towers, Condenser Cooling water system, including associated civil works for the above equipments and systems, which is in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening.

(b) The Bidder meeting the requirements indicated at 1.7.1(a) above except for electrostatic precipitators/bag filters, Switchyard, Coal Handling plant, Ash handling plant, Cooling Towers, Condenser Cooling water system, would also qualify provided the Bidder meets the requirement indicated at 4.1.0(b) or associates with a Project Management Organization meeting the requirement indicated at 4.1.0(b).

1.7.2 The Bidder shall associate/ collaborate for the (i) Steam Generator and (ii) Steam Turbine Generator sets and shall source these equipments only from the Associate / Collaborator who meets the following:

(i) Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(A) along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the Steam Generator

Or

Indian subsidiary / JV Company of Qualified Steam Generator Manufacturer, who shall in turn meet the requirements, stipulated at 1.3.1(a) or 1.4.1(a) as the case may be along with requirements stipulated at 3.0.0 for the Steam Generator

Or

Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator and 3.0.0 for the respective equipment.

(ii) Qualified Steam Turbine Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) above along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the Steam Turbine Generator Sets.

Or

Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1 (a) in conjunction with 1.4.3 (if applicable) along with requirements stipulated at 3.0.0 for the Steam Turbine Generator Sets.

Or

Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam turbine Generator and 3.0.0 for the respective equipment.

1.7.3 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

DJU	Executants	BG
For Steam Generator	The Bidder	-----
	QSGM	0.3%
	Indian Subsidiary / JV Company for Steam Generator	0.15%
	Other promoter having 25% or higher equity participation in	0.15%

DJU	Executants	BG
	Indian Subsidiary Company / JV Company for Steam Generator	
For Steam Generator (if the Steam Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator	The Bidder	-----
	QSTGM	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator	0.15%
	Other promoter having 25% or higher equity participation in associate's Indian Subsidiary Company / JV Company for Steam Turbine Generator	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (if the Steam turbine Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Project Management If applicable as per clause 4.1.0(b)	The Bidder	-----
	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents. ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

- 1.7.4 In case the Bidder's associate is supercritical steam turbine manufacturer meeting the requirements of clause 1.1.1(B) except for generator would also qualify provided the Subsidiary Company / JV Company of the

supercritical steam turbine generator manufacturer associates and has a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian Subsidiary Company / JV Company for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary Company / JV Company or up to the end of defect liability period of the contract, whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.7.3 above.

Notes for clause 1.0.0

(1) Definitions

- (i) "Qualified Steam Generator Manufacturer" (QSGM) means a manufacturer meeting requirements stipulated at 1.1.1(A).
- (ii) "Qualified Steam Turbine Generator Manufacturer" (QSTGM) means a manufacturer meeting requirements stipulated at 1.1.1(B).
- (iii) Wherever "Indian Manufacturing Company" is indicated, the same shall mean a Subsidiary Company or a Joint Venture Company or an Indian Steam Generator Manufacturing Company or an Indian Steam Turbine Generator Manufacturing Company registered in India under the Companies Act of India or as per the prevailing laws of India.
- (iv) Wherever the term 'coal fired' is appearing above, "coal" shall be deemed to also include bituminous coal/sub-bituminous coal/brown coal/lignite

(2) Erection/Commissioning

Where erection / supervision of erection and commissioning / supervision of commissioning has not been in the scope of the Bidder as mentioned in clause 1.1.0 & 1.2.0, it should have acted as an advisor for erection and commissioning of the Steam Generator & auxiliaries/ Steam Turbine & Generator, as the case may be. Necessary documents / certificates from the client, in support of above shall be furnished along with the techno-commercial bid.

(3) Direct / Indirect order

- i) The Bidder / Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer / Qualified Generator Manufacturer shall also be considered qualified, in case the award for the reference works (steam generator / Turbine and generator) has been received by the Bidder / Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer / Qualified Generator Manufacturer either directly from owner of plant or any other intermediary organization. A certificate from such owner of plant or the intermediary organization shall be required to be furnished by the Bidder / Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer / Qualified Generator Manufacturer along with its techno-commercial bid in support of its claim of meeting requirement stipulated at 1.1.1(A), 1.1.1(B), 1.1.4, 1.2.1 and 1.2.3 above as the case may be.
- ii) Certificate from owner of the plant shall also be furnished by the Bidder / Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer for the successful operation of the steam generator / turbine generator set as specified at 1.1.1(A), 1.1.1(B), 1.1.4, 1.2.1 and 1.2.3 above as the case may be along with the techno-commercial bid.

(4) Holding Company as a Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer

- (i) A Holding Company, singularly or collectively along with its Subsidiaries (held either directly or indirectly), meeting the requirements of clause 1.1.1(A) / 1.1.1(B) above, and also owning the technology for supercritical steam generators / supercritical steam turbine generators, shall also be considered as Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer. However, in such a case either the Indian subsidiary Company created for manufacturing of supercritical steam generator / supercritical steam turbine generators in India shall be a subsidiary of the Holding Company or the Holding Company shall maintain a minimum equity of 26% in the Joint Venture Company, created for manufacturing of supercritical steam generator / supercritical steam turbine generators in India.
- (ii) In such a case, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder for successful performance of the contract for the scope related to steam turbine generator and auxiliaries including turbine cycle, regenerative feed heating and pumping system / contract for the scope related to steam generator and auxiliaries (as the case may be) as per the format enclosed in bidding documents.
- In case of award, if the Holding Company itself is not the Bidder as a Qualified Steam Generator / Qualified Steam Turbine Generator Manufacturer, the Holding Company and all such entities lending strength / experience to the Holding Company shall each be required to furnish separate on demand bank guarantees for an amount aggregating 0.6% of the total contract price of the EPC Package divided equally among them, in addition to the contract performance security to be furnished by the Bidder. This bank guarantee requirement shall supersede bank guarantee requirement stipulated at clause 1.1.0(applicable for associate), 1.3.0, 1.4.0, 1.5.0 & 1.7.0 for the Qualified Steam Generator / Qualified Steam Turbine Generator Manufacturer.
- However, in case the Holding Company itself is the Bidder as a Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer as per clause 1.1.0, Bidder shall submit its board resolution stating that in case of any likely change of management control of any of these subsidiaries, the Bidder shall arrange for separate on demand bank guarantees from all such entities lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A) / 1.1.1(B) for an amount aggregating 0.6% of the total contract price of the EPC Package divided equally among them before the change in management control actually occurs.
- (iii) As an alternative to the requirements of Note 4(ii) above, the Holding Company, as a Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder for successful performance of the contract for the scope related to steam turbine generator and auxiliaries including turbine cycle, regenerative feed heating and pumping system / contract for the scope related to steam generator and auxiliaries (as the case may be) as per the format enclosed in bidding documents. However, the Bidder shall submit a board resolution of the Holding Company stating that in case of any likely change of management control of any of these subsidiaries, the Holding Company shall arrange for signing of DJU by all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A) / 1.1.1(B), in line with the requirements of Note 4(ii) above before the change in management control actually occurs.
- In case of award, if the Holding Company itself is not the Bidder as a Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer, the Holding Company shall be required to furnish separate on demand bank guarantee for an amount of 0.6% of the total contract price of the EPC Package, in addition to the contract performance security to be furnished by the Bidder. This bank guarantee requirement shall supersede

bank guarantee requirement stipulated at clause 1.1.0(applicable for associate), 1.3.0, 1.4.0, 1.5.0 & 1.7.0 for the Qualified steam generator / Qualified Steam Turbine Generator Manufacturer. In case of any likely change of management control of any of its subsidiaries lending strength/ experience, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A) / 1.1.1(B), in line with Note 4(ii) above before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company.

However, in case the Holding Company itself is the Bidder as a Qualified steam generator manufacturer / Qualified Steam Turbine Generator Manufacturer as per clause 1.1.0, and anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A) / 1.1.1(B), the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A) / 1.1.1(B), in line with Note 4(ii) above before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company.

(5) Steam Generator Manufacturer with Technology Tie-up for Variable Pressure Design

In case a supercritical Steam Generator manufacturer meets all the requirements as specified in clause no. 1.1.1(A) above except that the evaporator in the reference steam generator is not designed for variable pressure operation and is designed for constant pressure (Universal Pressure) operation only, in such case, the supercritical Steam Generator manufacturer shall be considered to be qualified, provided that, such supercritical Steam Generator manufacturer has an ongoing license agreement (which covers technology transfer), as on the date of techno-commercial bid opening, with the original Technology Owner (Licensor) for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges).

- i. The licensor should have experience of providing such variable pressure design steam generator technology for at least one (1) no. of pulverized coal fired supercritical steam generator for a 1500 T/hr or higher capacity using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing with the evaporator suitable for variable pressure operation in sub-critical and super-critical pressure ranges and which should be in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening.
- ii. The Bidder shall offer only the type of steam generator i.e. single pass (tower type) or two pass type for which the Bidder is qualified and shall offer only the type of water wall tubing (either spiral wound (inclined) or vertical plain or vertical rifled type) for which his licensor is qualified.
- iii. In such an event, the Bidder shall furnish a Deed of Joint Undertaking executed between the Bidder and the supercritical steam generator manufacturer (as the case may be) and its Technology Owner (Licensor), as per the format enclosed in the Bidding Documents towards the Bidder and the licensor being jointly and severally liable to the Employer for successful performance of the Steam Generator along with an extended warranty of at least one (1) year over and above what is required as per tender documents. The Deed of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected.
- iv. In case of award, Technology Owner (Licensor) will be required to furnish an on demand bank guarantee for an amount of INR 12 Million (Rupees Twelve Million) in addition to the contract performance security to be furnished by the Bidder."

(6) For clause 1.4.0

In case the Indian majority stake holder of the JV Company does not have requisite EPC experience as mentioned at clause 1.4.1 above, it may still be considered qualified if it is wholly owned by a parent company who fully meets the requisite EPC experience provided the parent company maintains its 100% equity in such wholly owned subsidiary for a lock in period of 7 years from the date of incorporation of JV company or up to the end of the defect liability period of the contract whichever is later.

In such a case, the parent company mentioned above shall necessarily be part of DJU being submitted by the Bidder.

In case of award, the parent company shall be required to furnish an on demand bank guarantee for an amount of 0.1% of total contract price of the EPC package in addition to the bank guarantee requirement indicated at clause 1.4.2 and 1.4.3.

(7) For clause 1.5.0

Majority stake in JV Company can be held either directly by the Bidder or through its wholly owned subsidiary provided the Bidder maintains its 100% equity in such wholly owned subsidiary for a lock in period of 7 years from the date of incorporation of JV company or up to the end of the defect liability period of the contract whichever is later.

In case majority stake in the JV Company is held by wholly owned subsidiary of the Bidder then such wholly owned subsidiary shall necessarily be part of DJU being submitted by the Bidder.

In case of award the wholly owned subsidiary as mentioned above shall be required to furnish an on demand bank guarantee for an amount of 0.1% of total contract price of EPC package in addition to the bank guarantee requirement at clause 1.5.2 and 1.5.3.

(8) For clause 1.1.0, 1.3.0, 1.4.0 & 1.5.0

The manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical steam generator / supercritical steam turbine generator in India of the above Indian subsidiary / JV Company. In such an event, the manufacturing company shall remain a subsidiary of the Indian subsidiary / JV company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of the manufacturing company or up to the end of the defect liability period of the contract, whichever is later.

In such a case the manufacturing company shall necessarily be part of DJU being submitted by the Bidder.

In case of award the manufacturing company shall be required to furnish an on demand bank guarantee for an amount of 0.1% of total contract price of EPC package in addition to the bank guarantee requirement at clause 1.1.3, 1.1.4, 1.3.2, 1.3.3, 1.4.2, 1.4.3, 1.5.2 and 1.5.3.

(9) Equity lock in period

Wherever equity lock in period requirement or subsidiary status requirement is indicated, the Bidder would be required to furnish along with his techno-commercial bid, a Letter of Undertaking from the promoter(s) supported by Board Resolution as per the format enclosed in the bid documents, for maintaining required minimum equity for the lock in period mentioned / maintaining the subsidiary status.

Following is also applicable for clauses 1.3.0, 1.4.0 and 1.5.0:

In case the Indian Subsidiary (ies) /JV Company (ies) (formed for manufacturing Super critical Steam Generator and/or supercritical Steam Turbine Generator sets) meets the criteria specified under Note No. 13 of "Notes for clause 1.0.0" and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0, then the bidder would have the option of submitting "Letter of Undertaking" for support from the QSGM and/or QSTGM and/or QGM, as applicable, along with the techno commercial bid as per the format enclosed in the

bidding documents instead of the undertakings / documents for maintaining the minimum equity for the lock-in period mentioned / maintaining the subsidiary status, wherever indicated, in respect of QSGM and/or QSTGM and/or QGM, as applicable.

(10) For Clause 1.2.0

“Steam Turbine Generator” indicated at clause 1.2.2 shall mean Steam Turbine, Generator and their auxiliaries as included in the DJU formats included in the bidding documents.

“Steam Generator” indicated at clause 1.2.2 shall mean Steam Generator and its auxiliaries as included in the DJU formats included in the bidding documents.

(11) For clause 1.1.0, 1.3.0, 1.4.0, 1.5.0, 1.6.0, 1.7.0

“for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system” indicated at clause 1.1.3, 1.3.2, 1.4.2, 1.5.2, 1.6.2, 1.7.3 shall mean Steam Turbine Generator and their Auxiliaries including turbine cycle, regenerative feed heating and pumping system as included in the DJU formats included in the bidding documents.

“for the scope related to Steam Generator and Auxiliaries” indicated at clause 1.1.3, 1.3.2, 1.4.2, 1.5.2, 1.6.2, 1.7.3 shall mean Steam Generator and Auxiliaries as included in the DJU formats included in the bidding documents.

(12) For clause 1.6.0

Sourcing of the Steam generators or Steam turbine generators, either from a qualified associate or from the bidder itself meeting the requirements indicated in the applicable clauses of relevant route is acceptable.

(13) For clauses 1.1.0, 1.2.0, 1.3.0, 1.4.0, and 1.5.0

Bidders participating through any of the Routes 1.1.0 or 1.2.0 or 1.3.0 or 1.4.0 or 1.5.0 shall not be required to furnish deed of joint undertaking (DJU) and associated BG for the Steam Generator and /or Steam Turbine Generator (as the case may be), in case they meet the following criteria:

Eight (8) Nos supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be) manufactured/supplied in India by the Indian Subsidiary/JV Company / Indian manufacturing company should be in commercial operation (achieved COD) out of which four (4) such Steam Generators and/or Steam Turbine Generators (as the case may be) should have been in commercial operation for at least one year and Performance Guarantee (PG) Test should have been successfully completed in any two (2) such Steam Generators and/or Steam Turbine Generators (as the case may be) prior to the date of techno-commercial bid opening.

In case any problem related to supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be) & Auxiliaries is encountered during execution of the contract, bidder shall resolve the same within a reasonable time (in the opinion of the owner) by itself/through its collaborator/through firm having competency to resolve such issues. If the problem is not resolved within a reasonable period of time in the opinion of the owner, Owner shall have the option to approach directly to the collaborator/licensor/technology Provider or any other firm to resolve the issue. In such a case the financial expenditure(s) incurred by Owner for resolution of such issues will be to bidder's account. Accordingly, bidder shall be required to submit a letter along with the techno commercial bid valid up to the end of defect liability period of the contract, as per the format enclosed in the bidding documents.

2.0.0 Financial Criteria:

2.1.0 Financial Criteria for the Bidder

- 2.1.1 The average annual turnover of the Bidder, in the preceding three (3) financial years as on the date of techno-commercial bid opening, should not be less than **₹ 20946 Million (Indian Rupees Twenty Thousand Nine Hundred Forty Six Million only) or in equivalent foreign currency.**

In case a Bidder does not satisfy the average annual turnover criteria, stipulated above on its own, its Holding Company would be required to meet the stipulated turnover requirements as above, provided that the Net Worth of such Holding Company as on the last day of the preceding financial year is at least equal to or more than the paid-up share capital of the Holding Company. In such an event, the Bidder would be required to furnish along with its Techno-Commercial bid, a Letter of Undertaking from the Holding Company, supported by the Holding Company's Board Resolution, as per the format enclosed in the bid documents, pledging unconditional and irrevocable financial support for the execution of the Contract by the Bidder in case of award.

- 2.1.2 **Bidder should have Positive Net Worth as on the last day of the preceding financial year.**

- 2.1.3 In case the Bidder is not able to furnish its audited financial statements on standalone entity basis, the unaudited unconsolidated financial statements of the Bidder can be considered acceptable provided the Bidder furnishes the following further documents on substantiation of its qualification:

- (i) Copies of the unaudited unconsolidated financial statements of the Bidder alongwith copies of the audited consolidated financial statements of its Holding Company.
- (ii) A Certificate from the CEO/CFO of the Holding Company, as per the format enclosed in the bidding documents, stating that the unaudited unconsolidated financial statements form part of the Consolidated Annual Report of the Company.

In cases where audited results for the last financial year as on the date of Techno Commercial bid opening are not available, the financial results certified by a practicing Chartered Accountant shall be considered acceptable. In case, Bidder is not able to submit the Certificate from a practicing Chartered Accountant certifying its financial parameters, the audited results of three consecutive financial years preceding the last financial year shall be considered for evaluating the financial parameters. Further, a Certificate would be required from the CEO/CFO as per the format enclosed in the bidding documents stating that the Financial results of the Company are under audit as on the date of Techno-commercial bid opening and the Certificate from the practicing Chartered Accountant certifying the financial parameters is not available.

2.2.0 Financial Criteria for the Collaborator(s) / Associate(s)

- 2.2.1 The average annual turnover of the **Collaborator(s) / Associate(s)**, in the preceding three (3) financial years as on the date of techno-commercial bid opening, should not be less than the following for different Collaborator(s) / associate(s) as applicable.

Collaborator(s) / Associate(s)	Applicable clauses	Required annual turnover in Million INR or in equivalent foreign currency
QSGM	1.2.1, 1.6.2(a)(ii)	INR 2095 Million (Indian Rupees Two Thousand Ninety Five Million Only)
	1.1.2(c), 1.3.1(a), 1.3.1(b), 1.4.1(a), 1.4.1(b), 1.5.1(a), 1.5.1(b), 1.6.2 (a)(i)/(iii)/(iv),	INR 8141 Million (Indian Rupees Eight thousand One hundred Forty One Million only)

	1.7.2	
QSTGM	1.2.1, 1.2.3, 1.6.2(a)(ii)	INR 2095 Million (Indian Rupees Two Thousand Ninety Five Million Only)
	1.1.2(c), 1.3.1(a) , 1.3.1(b), 1.4.1(a) , 1.4.1(b), 1.5.1(a) , 1.5.1(b), 1.6.2(a)(i)/(iii)/(iv) , 1.7.2	INR 2838 Million (Indian Rupees Two thousand Eight hundred Thirty Eight Million only)
Indian Steam Generator and Steam Turbine generator manufacturer (if steam generator is being sourced as per clause 1.6.2(a)(ii))	1.6.2(a)(ii)	INR 8141 Million (Indian Rupees Eight thousand One hundred Forty One Million only)
Indian Steam Generator and Steam Turbine generator manufacturer (if steam turbine generator is being sourced as per clause 1.6.2(a)(ii))	1.6.2(a)(ii)	INR 2838 Million (Indian Rupees Two thousand Eight hundred Thirty Eight Million only)
Subsidiary Company / JV Company of QSGM	1.1.2(c), 1.3.1(b), 1.4.1(b), 1.5.1(b), 1.6.2(a) (i)/(iii)/(iv) , 1.7.2	INR 8141 Million (Indian Rupees Eight thousand One hundred Forty One Million only)
Subsidiary Company / JV Company of QSTGM	1.1.2(c), 1.3.1(b), 1.4.1(b), 1.5.1(b), 1.6.2(a) (i)/(iii)/(iv) , 1.7.2	INR 2838 Million (Indian Rupees Two thousand Eight hundred Thirty Eight Million only)
Separate Generator Manufacturer	1.1.4, 1.2.3, 1.3.3, 1.4.3, 1.5.3, 1.6.4 , 1.7.4	INR 2095 Million (Indian Rupees Two Thousand Ninety Five Million Only)

Holding Company as QSGM	Notes for clause 1.0.0 (4)	INR 8141 Million (Indian Rupees Eight thousand One hundred Forty One Million only)
Holding Company as QSTGM	Notes for clause 1.0.0 (4)	INR 2838 Million (Indian Rupees Two thousand Eight hundred Thirty Eight Million only)
Technology Owner (Licensor to QSGM)	Notes for clause 1.0.0 (5)	INR 2095 Million (Indian Rupees Two Thousand Ninety Five Million Only)

In case the Collaborator/Associate does not satisfy the average annual turnover criteria above on its own, its Holding Company would be required to meet the stipulated turnover requirements at Cl. 2.2.1 above, provided that the net worth of such Holding Company, as on the last day of the preceding financial year is at least equal to or more than the paid-up share capital of the Holding Company. In such an event, the Collaborator/Associate would be required to furnish along with bidder's Techno-Commercial bid, a Letter of Undertaking from the Holding Company, supported by Board Resolution of the Holding Company, as per the format enclosed with the bidding documents, pledging unconditional and irrevocable financial support to the Collaborator/Associate to honour the terms and conditions of the Deed of Joint Undertaking in case of award of the Contract to the Bidder with whom Collaborator/Associate is associated.

2.2.2 Each Collaborator/Associate should have Positive Net Worth as on the last day of the preceding financial year.

2.2.3 In case the Collaborator(s) / Associate(s) is not able to furnish its audited financial statements on stand-alone entity basis, the unaudited unconsolidated financial statements of the Collaborator(s) / Associate(s) can be considered acceptable provided the Collaborator(s) / Associate(s) furnishes the following further documents on substantiation of its qualification:

- (i) Copies of the unaudited unconsolidated financial statements of the Collaborator(s) / Associate(s) along with copies of the audited consolidated financial statements of the Holding Company of Collaborator(s) / Associate(s).
- (ii) A Certificate from the CEO/CFO of the Holding Company, as per the format enclosed with the bidding documents, stating that the unaudited unconsolidated financial statements form part of the consolidated financial statements of the Holding Company of Collaborator/Associate.

In cases where audited results for the last financial year as on the date of Techno Commercial bid opening are not available, the financial results certified by a practicing Chartered Accountant shall be considered acceptable. In case, Collaborator/Associate is not able to submit the Certificate from a practicing Chartered Accountant certifying its financial parameters, the audited results of three consecutive financial years preceding the last financial year shall be considered for evaluating the financial parameters. Further, a Certificate would be required from the CEO/CFO as per the format enclosed in the bidding documents stating that the Financial results of the Company are under audit as on the date of Techno-commercial bid opening and the Certificate from the practicing Chartered Accountant certifying the financial parameters is not available.

NOTES:

- (i) Net worth means the sum total of the paid up share capital and free reserves. Free reserve means all reserves credited out of the profits and share premium account but does not include reserves credited out of the revaluation of the assets, write back of depreciation provision and amalgamation. Further any debit balance of Profit and Loss account and miscellaneous expenses to the extent not adjusted or written off, if any, shall be reduced from reserves and surplus.
- (ii) Other income shall not be considered for arriving at annual turnover.
- (iii) "Holding Company" and "Subsidiary Company" shall have the meaning ascribed to them as per Companies Act of India.
- (iv) For annual Turnover indicated in foreign currency, the exchange rate as on seven (7) days prior to the date of Techno-Commercial bid opening shall be used.
- (v) In case the bidder / collaborator(s) / associate(s) participating under Clause 1.3.0 or 1.4.0, do not meet the turnover requirement , then, the Turnover of any of the Promoters individually or all the promoters (in a combined manner) (each having Equity Stake more than 25%) of the Subsidiary Company / JV Company would be considered. Each such promoter of the Subsidiary Company / JV Company shall have to meet the Net Worth criteria individually as per clause 2.1.2 and/or 2.2.2. In such an event the Bidder would be required to furnish along with its techno-commercial bid, a Letter of Undertaking from such promoter(s), supported by Board Resolution as per the format enclosed in the bidding documents, pledging unconditional and irrevocable financial support for execution of the Contract by the Bidder in case of award.

3.0.0 Phased Manufacturing Program and Transfer of Technology

- 3.1.0 The Bidder and its associate shall give firm commitment (for their respective equipment) in the form of an undertaking supported by board resolution to set up / augment the existing manufacturing facility for supercritical Steam Generator and Steam Turbine Generator sets in India either by itself or through its subsidiaries or through Joint Venture (JV) in India in a phased manner as per Phased Manufacturing Program elaborated in the bidding documents.

The manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical Steam Generators / supercritical steam turbine generators in India of the above Indian subsidiary / JV Company. In such an event, the manufacturing company shall remain a subsidiary of the Indian subsidiary / JV company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of the manufacturing company or up to the end of the defect liability period of the contract, whichever is later.

In case of award the Bidder shall submit an on demand bank guarantee of INR 650 Millions for Steam Turbine Generators and INR 900 Million for Steam Generators as security for any default against meeting the specified Phased Manufacturing Program.

- 3.2.0 Valid technology transfer agreements including license to manufacture and supply in India, separately for steam generator sets and steam turbine generator sets, between the Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer or their technology provider (if any) and the Indian Manufacturing Company should be in place on the date of techno-commercial bid opening covering the type, size and rating of the Steam Generators / Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The signatory of the technology transfer agreement with the Indian Manufacturing Company should either own the technology or should have authorization to use and further license the technology.

Documentary evidence to this effect shall be furnished along with the techno-commercial bid. The technology transfer agreement shall necessarily cover transfer of technological know-how for super critical Steam Generator / supercritical Steam Turbine Generator in the form of complete transfer of design dossier, design softwares, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Such technology transfer agreement must have provision that the transfer of technology to the Indian Manufacturing Company shall be completed by the time last 800 MW supercritical unit is supplied by the Bidder under this tender.

- 3.3.0 Major part (minimum 75%) of the land required for setting up manufacturing facility in India should be in possession with clear title either in the name of the "Indian Manufacturing Company(ies)" or its Indian promoter (but pledged / leased to the Subsidiary / JV company) prior to submission of techno-commercial bid. In case, the Bidder has existing manufacturing facility in India, he should have in possession major part (minimum 75%) of the additional land required with clear title for augmenting his already existing manufacturing facility. "Clear title" shall be deemed to also include land acquired on long term lease basis for minimum 30 years with a provision for further extension.
- 3.4.0 Promoters of the Subsidiary (ies) / JV Company (ies) will be required to either employ a minimum subscribed and paid up share capital or have net worth of INR 500 million in the respective Subsidiary / JV Company prior to the submission of techno-commercial bid. In case the Bidder is selected for award of the contract, either a minimum subscribed and paid up share capital or net worth of INR 1000 million in the respective Subsidiary / JV Company will have to be ensured by the promoters prior to the date of award. In the event the Bidder fails to meet this requirement, the Employer shall disqualify such Bidder. The certificates from a practicing Chartered Accountant shall be submitted by the Bidder certifying the amount of subscribed and paid up share capital, or net worth as the case may be as on a date not earlier than 15 days from the date of techno-commercial bid opening / award date as applicable.
- 3.5.0 The Bidder and its associate shall be required to furnish an undertaking (for their respective equipment) with regard to above as per format enclosed with the bidding documents.

Note to clause 3.0.0

(1) Among the bidder and its associate(s) who has already given commitments for PMP and submitted bank guarantees for security for default against specified PMP for steam Turbine Generators / Steam Generator to any Central / State sector power generating Company for supercritical projects **or if such bank guarantees have already been released** shall not be required to furnish further bank guarantees for security for default against specified PMP.

(2) In case the Indian Subsidiary Company/JV Company/Indian manufacturing company have already completed PMP, for supercritical boiler/supercritical steam turbine (as the case may be) then such Indian Subsidiary Company/JV Company/Indian manufacturing company need not submit the undertakings/documents for PMP again for the respective equipment. However, certificate in support of completion of such PMP duly issued by the competent authority **or proof of release of the bank guarantee by any Central / State power generating company** shall be submitted along with the techno-commercial bid.

4.0.0 Project Management Experience

- 4.1.0 (a) The Bidder should have executed in the last 10 years industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10000 million or more. At least one of such projects should have a contract value of INR

4000 million or more. These projects shall be in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening.

OR

- 4.1.0(b) The Bidder should have executed at least one (1) no of pulverized coal / lignite fired reheat type of unit of at least 200 MW which is in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening. The scope of work of such reference plant should have necessarily included engineering management, procurement management, construction management, and commissioning/ supervision of commissioning of steam generator and steam turbine generator sets with their associated auxiliaries, Electro static precipitators/ bag filters, Switchyard, Coal handling plant, Ash handling plant, Cooling Towers, Condenser cooling water system for carrying out project management. Otherwise the Bidder shall associate with a Project Management Organization who meets the above requirement for project management.

If the project management of the EPC package is to be carried out by a Project Management Organization other than the Bidder itself then, the Bidder shall furnish undertaking jointly executed by it and Project Management Organization in which all the executants of DJU shall be jointly and severally liable to the Employer to perform successfully all the project management activities included in his scope as per format enclosed in the bidding documents. The Deed of Joint Undertaking shall be submitted along with Techno-Commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. In case of award, the Project Management Organization will be required to furnish an on demand bank guarantee for INR 20 Million (Rupees twenty Million) in addition to the contract performance security by the Bidder.

5.0.0 Engineering Experience

The Bidder should carryout Engineering of the complete EPC package either by itself or through an Architect Engineering firm meeting either the requirements indicated at 5.1.0 or 5.2.0 or 5.3.0 below:

- 5.1.0(a) (i) The Bidder should have carried out Engineering of at least one (1) no. of pulverized coal/ lignite fired reheat type supercritical unit, with minimum unit rating of 500 MW, consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, steam Generator start up system, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

And

- 5.1.0 (a) (ii) The Bidder should have carried out Engineering of at least one (1) no. of pulverized coal / lignite fired reheat type unit, with minimum unit rating of 200 MW consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, regenerative heating and pumping system , Power cycle piping and flash tanks/ flash boxes, Coal handling plant, Ash handling plant, Condenser cooling water system, Switchyard, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.
- 5.1.0 (b) If the Bidder does not meet the requirement indicated at 5.1.0 (a)(i) but meets the requirement indicated at 5.1.0 (a)(ii) then the Bidder shall get the engineering documents related to Thermal cycle, Power Cycle piping and flash tanks/ flash boxes, Steam Generator start up system, Sizing of Main Plant equipments, interface between SG and TG, unit start up and control philosophy vetted by an Architect Engineering Firm who meets the requirement indicated at 5.1.0 (a) (i). In such a case the Bidder shall furnish an Undertaking Jointly executed by it and the architect engineering firm, meeting the requirement indicated at 5.1.0(a) (i) in which all the executants of DJU shall be jointly and severally liable to the Employer to perform successfully all the engineering activities included in the scope of the

architect engineering firm as per format enclosed in the bidding documents. The Deed of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. In case of award, the architect engineering firm will be required to furnish an on demand bank guarantee for INR 1.5 Million (Rupees One and Half Million) in addition to the contract performance security to be furnished by the Bidder.

- 5.2.0(a)(i) The steam generator and/or steam turbine generator manufacturer bidding under route 1.1.0 or 1.2.0 should be engaged in or should have completed Engineering of at least one (1) no. of pulverized coal/ lignite fired reheat type supercritical unit, with minimum unit rating of 500 MW, consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, steam Generator start up system, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes (in a single contract or in two separate contracts in a single unit), which is under execution prior to the date of Techno-Commercial bid opening.

And

- 5.2.0(a)(ii) The steam generator and/or steam turbine generator manufacturer bidding under route 1.1.0 or 1.2.0 should have carried out Engineering of at least one (1) no. of pulverized coal / lignite fired reheat type unit, with minimum unit rating of 500 MW consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes, Coal handling plant, Ash handling plant, Condenser cooling water system, Switchyard, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

- 5.3.0(a) If the Bidder does not meet either the requirements indicated at 5.1.0 (a)(i) & (ii) or the requirements indicated at 5.2.0(a)(i) & (ii) then, the Bidder shall get the complete engineering of the EPC package done by an Architect Engineering firm who meets the requirements indicated at 5.1.0 (a) (i) & (ii). In such a case the Bidder shall furnish undertaking jointly executed by it and the Architect Engineering Firm in which all the executants of DJU shall be jointly and severally liable to the Employer to perform successfully all the engineering activities included in its scope as per format enclosed in the bidding documents. The Deed of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. In case of award, architect engineering firm will be required to furnish an on demand bank guarantee for INR 1.5 Million (Rupees One and Half Million) in addition to the contract performance security to be furnished by the Bidder.

- 5.3.0(b) As an alternate to 5.3.0(a) the Bidder shall get the engineering of the Main Plant equipment / systems i.e. steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, steam Generator start up system, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes and interface between Boiler and Turbine, done by an Architect Engineering firm who meets the requirements indicated at 5.1.0 (a) (i) and the Bidder shall get the engineering of Balance of Plant including interface between Main Plant and Balance of Plant done by another architect engineering firm who meets the requirements indicated at 5.1.0(a)(ii). In such a case the Bidder shall furnish two separate Deed of Joint Undertakings (i) Jointly executed by it and the architect engineering firm for Main Plant Equipment / systems in which all the executants of DJU shall be jointly and severally liable to the Employer to perform successfully all the engineering activities of Main Plant equipment / system included in the scope of the architect engineering firm as per format enclosed in the bidding documents. (ii) Jointly executed by it and the architect engineering firm for Balance of Plant in which all the executants of DJU shall be jointly and severally liable to the Employer to perform successfully all the engineering activities of Balance of Plant including interface between Main Plant and Balance of Plant included in the scope of the architect engineering firm as per format enclosed in the bidding documents. The Deed of Joint Undertakings shall be

submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. In case of award, architect engineering firm for Main Plant equipment / system and for Balance of Plant will each be required to furnish an on demand bank guarantee for INR 1.5 Million (Rupees One and Half Million) in addition to the contract performance security to be furnished by the Bidder.

Note

- 1.0 The term 'Engineering' in clause 5.0.0, shall mean (a) Basic engineering for integration and interface between SG & TG. (b) Pre award engineering for system associated with BTG & BOP, (c) Post award engineering covering review of thermal cycle of the power plant, review and interface engineering for over all integration of various power plant equipment / packages including review of major design documentation such as design/ sizing calculations, layout, plant start up and control philosophy and schematic drawings and other documentation related to Mechanical, Civil, Electrical and C & I design.
- 2.0 For compliance of requirement stipulated in clause 5.1.0 (a) (i) & (ii) or 5.2.0(a) (i) & (ii) above, Bidder/ Architectural engineering firm can either use two different reference power plants or single reference power plant.

SECTION – II

INSTRUCTIONS TO BIDDERS

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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)	
1.0 1.1 2.0 2.1 2.2 2.3 2.4 3.0 4.0 4.1	INSTRUCTIONS TO BIDDERS A. Introduction	
	Source of Funds	
	Damodar Valley Corporation (hereinafter called 'DVC' or 'Employer') intends to finance the package named in the Bid Data Sheet (BDS), through Term Loan from Banks and/or FIs /ECB (external commercial borrowings) /World Bank/ADB etc./issue of Long term bonds and / or own resources.	
	Plant, Equipment and Services	
	For the purposes of these bidding documents, the word "facilities" means the plant and equipment to be supplied and installed, together with the services to be carried out by the contractor under the contract. The words "plant and equipment", "installation services" etc., shall be construed in accordance with the respective definitions given to them in the General Conditions of Contract.	
	Bidding is open to bidders from within/outside the Employer's country, subject to fulfilment of conditions specified in ITB Clause "Restrictions on procurement from a Bidder of a country which shares a land border with India".	
	For purposes of this clause, "origin" means the place where the plant and equipment or component parts thereof are mined, grown, or produced. Plant and equipment are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognised product results that is substantially different in basic characteristics or in purpose or utility from its components.	
	The origin of the plant, equipment, and services is distinct from the nationality of the Bidder.	
	Cost of Bidding The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Employer will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.	
	B. The Bidding Documents	
	Content of Bidding Documents	
	The facilities required, bidding procedures, contract terms and technical requirements are prescribed in the bidding documents. The bidding documents include the following sections: Section I – Invitation for Bids (IFB)	
KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – II (ITB)
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	documents that it receives no later than the last date of receipt of queries as specified in Invitation for Bids (IFB). The Employer will host the Clarifications at https://etenders.gov.in/eprocure/app and Bidders can view these clarifications once they are hosted. Bidders shall be notified through e-mail regarding hosting issuance of clarification at https://etenders.gov.in/eprocure/app. Bidders are also advised to regularly check https://etenders.gov.in/eprocure/app regarding hosting of clarification, if any. Further, no queries from Bidders shall be entertained after last date of receipt of Queries as specified in IFB. Accordingly, any query (ies) received from Bidders after the cut-off date shall not be considered and bidders to submit the bid based on the bidding documents (and amendments/ Errata/ Clarifications etc. thereof) issued. 5.2 The Bidder is mandatorily required to visit after NIT, and examine the site where the facilities are to be installed and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for supply and installation of the facilities. The costs of visiting the site shall be borne by the bidder fully. The Bidder shall submit the Site Visit Certificate as per Appendix-D to Attachment-3A, Book 1 of 3, Sec-VII of Bidding document, duly signed by bidder and Employer's site representative along with their Envelope-II (Techno-Commercial) Bid. 5.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such inspection, but only upon the express condition that the Bidder, its personnel and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof and will be responsible for death or personal injury, loss of or damage to property and any other loss, damage, costs and expenses incurred as a result of the inspection. 6.0 Amendment to Bidding Documents 6.1 At any time prior to the deadline for submission of Bids, the Employer may, for any reason, whether at its own initiative, or in response to a clarification requested by a prospective Bidder, amend the bidding documents. 6.2 The amendments will be hosted at https://etenders.gov.in/eprocure/app for viewing by the Bidder. Bidders shall be notified through e-mail regarding the hosting issuance of the amendments. The amendments will be binding on Bidders and it will be assumed that the information contained therein will have been taken into account by the Bidder in its bid. Bidders are also advised to regularly check https://etenders.gov.in/eprocure/app regarding hosting of Amendment, if any. 6.3 In order to afford prospective Bidders reasonable time in which to take the amendment into account in preparing their bid, the Employer may, at its discretion, extend the deadline for the submission of bids. C. Preparation of Bids		
KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; vertical-align: top;"> EPC PACKAGE SECTION – II (ITB) </td> <td style="width: 50%; text-align: center; vertical-align: top;"> Page 3 of 43 </td> </tr> </table>	EPC PACKAGE SECTION – II (ITB)	Page 3 of 43
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)
7.0	Language of Bid The bid prepared by the Bidder and all correspondence and documents related to the bid exchanged between the Bidder and the Employer shall be written in English language, provided that any printed literature furnished by the Bidder may be written in another language, as long as such literature is accompanied by a translation of its pertinent passages in English language in which case, for purposes of interpretation of the bid, the translation shall govern. The English Translation of the documents shall be carried out by professional translators and the translator shall certify that he is proficient in both languages in order to translate the document and that the translation is complete and accurate. Further, translation shall be authenticated by the Indian Consulate located in the Country where the documents have been issued or the Embassy of that Country in India.
8.0	Documents Comprising the Bid Single Stage Three Envelope Bidding procedure shall be followed as under: Envelope-I: Techno-Commercial Bid (hard copies documents in Offline mode) Envelope II: Techno-Commercial Bid (soft copies documents in Online mode) Envelope-III: Price Bid (Excel Sheet in Template Format) The bidder has to submit Techno-Commercial Bid (Envelope-I and Envelope-II) and Price Bid (Envelope-III) through website portal https://etenders.gov.in/eprocure/app (electronic mode) only. In addition, the documents mentioned in clause no. 8.1.1 have also to be submitted in Original in physical mode before the last date & time of submission of bid. To submit their bid through electronic mode, bidder has to use their digital signature certificate keys. The bidders are requested to download the entire bidding documents from the website https://etenders.gov.in/eprocure/app, within the date and time as specified in the Invitation for Bids (IFB), after online registration in the above website. The cost of bid documents (or tender Fee) as specified in Invitation for Bids (IFB) is to be paid in the form of a Crossed Account Payee Demand Draft in favour of "Damodar Valley Corporation", payable at Kolkata, original in separate sealed envelope (s) duly marked in accordance with ITB clause 15. Bidders who are unable to submit online Cost of Bidding documents through Demand Draft may opt for Online Transfer of Cost of Bidding documents through NEFT/RTGS to DVC's Bank Account whose details are as under: (i) Bank Name: United Bank of India (as now Punjab National Bank) (ii) Account Number: 0082250010682 (iii) Account Name: DAMODAR VALLEY CORPORATION (iv) Branch: New Manicktala Branch
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	(v) Bank Address: New Manicktala Branch, VIP Road, Kolkata-7000054 (vi) IFSC Code: PUNB0008220 ['0' Stands for zero] (vii) MICR No.: 700027099 While carrying out online transfer, Bidders shall ensure to enter “Tender Fee - Tender No.- Vendor Name” in the Text / Remarks / Reason field. Bidder shall intimate the details of same through email to concerned C&M executive and also upload the details in the “Fee/SCANNED COPY OF EMD” folder at https://etenders.gov.in/eprocure/app in the following format: Declaration for Tender Fee Deposit Tender No. : Vendor Name : UTR Reference : Amount: Date of Transfer: Transferor Bank: (Signature of Vendor with Seal) Proof of e-payment of Tender fee, shall also be submitted in separate envelope within the Envelope-I (hard copy documents) duly marked in accordance with ITB clause 15 alongwith uploading of same in the e-tendering portal. 8.1 Envelope-I: Techno-Commercial Bid (Hard Copy documents in Offline mode) The Envelope-I (Techno-Commercial Bid) shall comprise of the following: 8.1.1 Documents to be submitted in physical form in separate sealed envelope (s) duly marked in accordance with ITB clause 15. In addition, the scanned copy of these physical forms are to be uploaded by Bidder in Fee Cover/Envelope on the e-tender portal at website portal https://etenders.gov.in/eprocure/app: (a) Attachment 1: Bid Security Bid security shall be furnished in accordance with ITB Clause 12.0. (a1) Attachment 1A: Tender Fee Tender Fee details shall be furnished in accordance with provisions of Bid Documents at ITB 8.0 and value as mentioned at IFB. (b) Attachment 2: Power of Attorney	
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	A power of attorney, duly notarized by a Notary Public, indicating that the person signing the bid has the authority to sign the bid and that the bid is binding upon the Bidder during the full period of its validity in accordance with ITB Clause 13. Power of attorney(s), duly notarized by Notary Public, indicating that the person(s) signing the documents on behalf of Associate(s)/ collaborator(s)/ executants(s) of JV Agreement (if permissible in Section-III, Bid Data Sheet) have the authority to sign the same and the said documents are binding upon them during the full period of their validity. (The Authority of the person issuing the Power of Attorney shall also be submitted). Further, Bidder to note that bid can be submitted/digitally signed by only one person. The Power of Attorney must be in the name of person digitally signing the bids. (c) Attachment 3I: Deed of Joint Undertaking (If Applicable) (d) Attachment 3A11: Letter of undertakings along with Board Resolutions as per note no. 9 for clause no. 1.0.0 of item no. 4.0 of BDS. (d1) Attachment 3A11.a: Letter of undertaking for support, instead of Attachment 3A11, as per note no. 9 for clause no. 1.0.0 of item no. 4.0 of BDS. (e) Attachment 3A12: Letter of undertakings along with Board Resolutions as per note no. (v) to clause no. 2.0.0 of item no. 4.0 of BDS. (f) Appendix – A to Attachment 3A13: As per clause no. 2.1.3 of item no. 4.0 of BDS. (g) Appendix – B to Attachment 3A13: As per clause no. 2.1.1 of item no. 4.0 of BDS. (h) Appendix – C to Attachment 3A13: As per clause no. 2.1.3 of item no. 4.0 of BDS. (i) Appendix – A to Attachment 3A14: As per clause no. 2.2.3 of item no. 4.0 of BDS. (j) Appendix – B to Attachment 3A14: As per clause no. 2.2.1 of item no. 4.0 of BDS. (k) Appendix – C to Attachment 3A14: As per clause no. 2.2.3 of item no. 4.0 of BDS. (l) Attachment 18: Undertaking towards Phased Manufacturing Programme (PMP) along with Board resolution(s). (m) Attachment 20: Integrity Pact The "Integrity Pact" shall be furnished duly signed in all pages by authorised signatory accordance with the provision of Integrity Pact specified in ITB/BDS. (n) Attachment 6 : No Deviation Certificate No Deviation Certificate duly filled in shall be furnished as per Employer's format.	
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8.1.2	In addition, the scanned copy of above-mentioned physical forms shall be uploaded by Bidder in "Fee Cover" or Techno-commercial Envelope on the e-tender portal. Envelope-II: Techno-Commercial Bid (Online mode) Documents to be submitted online through e tender mode: The Bid Form as per Section-VII, Part 1 of 3, duly completed together with the following Attachments shall be uploaded on the e-tender portal (https://etenders.gov.in/eprocure/app) in Pre-Qual/Technical Cover/Envelope (a) Attachment 3: Bidder's Qualifications In the absence of pre-qualification, documentary evidence that the Bidder is eligible to bid and is qualified to perform the contract, if its bid is accepted, shall be furnished in Attachment-3 to Bid. The documentary evidence of the Bidder's qualifications to perform the contract, if its bid is accepted, shall establish to the Employer's satisfaction that the Bidder has the financial, technical, production, procurement, shipping, installation and other capacities and capabilities necessary to perform the contract and meets the experience and other criteria outlined below: The Bidder shall provide satisfactory evidence that he and/or, where applicable, his collaborator/ Promoters to Joint Venture (JV) Company/ Promoters to Subsidiary Company: (i) is a manufacturer/supplier, from an eligible source country, who regularly manufactures equipments of the type specified and/or undertakes the type of work specified and has adequate technical knowledge and relevant experience. (ii) does not anticipate a change in ownership during the proposed period of execution of work (If such a change is anticipated, a scope and effect thereof shall be defined). (iii) has adequate financial stability and status to meet the financial obligations pursuant to the works covered in the Bidding Documents. (The Bidders should submit their profit & loss account and balance sheet for the preceding three (3) financial years prior to the date of submission of bids). (iv) has adequate design, manufacturing and/or fabrication capability and capacity to perform the work properly and expeditiously within the time period specified. The evidence shall specifically cover, with written details, the installed manufacturing and/or fabrication capacities and present commitments (excluding those anticipated under this Specification) of the Bidder. If the present commitments are such that the installed capacity results in an inadequacy of manufacturing and/or fabrication capacities to meet the requirements appropriate to the works covered in his bid, then		
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	the details of alternative arrangements to be organised by the Bidder and/or his Collaborator/ Promoters to Joint Venture (JV) Company/Promoters to Subsidiary Company for this purpose and which shall meet the Employer's approval, shall be furnished. (v) has an adequate Project management organization covering the areas related to engineering of equipments/systems, interface engineering, procurement of equipments and the necessary field & management services required for successful construction, erection, testing and commissioning the equipments/system as required by the Bidding Documents. (vi) has established quality assurance systems and organisation designed to achieve high levels of equipment/system reliability, both during his manufacturing and/or fabrication and field installation activities. (vii) a company formed by the merger of two or more companies or divisions of such companies engaged in supply and installation of subject Package/systems can also participate provided the constituent companies or divisions before merger individually or jointly meet the stipulated qualification requirements fully. In addition to the requirements stipulated above, the Bidder should also meet the qualifying requirements stipulated in Item No. 4.0 of Bid Data Sheets. Bidder shall submit a 'Declaration' in the format enclosed as Attachment-3A15 stating that the Bidder has carried out a comprehensive assessment of the 'Capacity and Capability' of their Associate/ Collaborator and their Associate/Collaborator have sufficient Capacity & Capability to execute the Work as per Provisions of the Bidding Documents. Notwithstanding anything stated above, the Employer reserves the right to undertake a physical assessment of the capacity and capabilities including financial capacity and capability of the Bidder / his Collaborator(s) / Associate(s) / Subsidiary(ies) / Group Company(ies) to perform the Contract, should the circumstances warrant such assessment in the overall interest of the Employer. The physical assessment by the Employer shall include but not be limited to the assessment of the office/facilities/banker's/reference works/ similar project being executed by Bidder. A negative determination of such assessment of capacity and capabilities may result in the rejection of the Bid. The above right to undertake the physical assessment shall be applicable for the Qualifying Requirements stipulated in both Section - ITB and in Section - BDS. In case Bidder is permitted in the Bid Data Sheets to offer to supply and/or install plant and equipment under the contract that the Bidder did not manufacture or	
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	otherwise produce and/or install, the Bidder shall (i) have the financial and other capabilities necessary to perform the contract; (ii) have been duly authorised by the manufacturer or producer of the related plant and equipment or component to supply and/or install that item in the Employer's country; (iii) be responsible for ensuring that the manufacturer or producer of the related item meets the minimum criteria listed for that item. (a1) Attachment-3C: The certificate/ relevant document from executants of DJU except bidder confirming that they do not anticipate any change in ownership during the proposed period of execution of work (if such a change is anticipated, the scope and effect thereof shall be defined). (a2) Appendix-A to Attachment-3A (if Applicable) Appendix-A to Attachment-3A duly filled in as per the Employer's format. (a3) Appendix-B to Attachment-3A: Undertaking from Statutory Auditor Appendix-B to Attachment-3A duly filled in as per the Employer's format. (a4) Appendix-C to Attachment-3A: Undertaking from TPIA Appendix-C to Attachment-3A duly filled in as per the Employer's format. (a5) Appendix-D to Attachment-3A: Site Visit Certificate Appendix-D to Attachment-3A duly filled in as per the Employer's format. (b) Attachment 4: Eligibility and Conformity of the Facilities Documentary evidence established in accordance with ITB Clause 2 that the facilities offered by the Bidder in its bid or in any alternative bid (if permitted) are eligible and conform to the bidding documents. The documentary evidence of the eligibility of the facilities shall consist of a statement on the country of origin of the plant and equipment offered, which shall be confirmed by a certificate of origin issued at the time of shipment. The documentary evidence of the conformity of the facilities to the bidding documents may be in the form of literature, drawings and data, and shall include: (i) a detailed description of the essential technical and performance characteristics of the facilities; (ii) a list giving full particulars, including available sources, of all spare parts, special tools, etc., necessary for the proper and continuing functioning of the facilities following completion of facilities in accordance with provisions of contract; and	
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	(iii) a commentary on the Employer's Technical Specifications and adequate evidence demonstrating the substantial responsiveness of the facilities to those specifications. Bidder shall note that standards for workmanship, materials and equipment designated by Employers in the bidding documents are intended to be descriptive (establishing standards of quality and performance) only and not restrictive. The bidder may substitute alternative standards, brand names and/or catalogue numbers in its bid, provided that it demonstrates to the Employer's satisfaction that the substitutions are substantially equivalent or superior to the standards designated in the Technical Specifications. Attachment 4A: Special Tools and Tackles The bidder shall provide the details regarding Special Maintenance Tools and Tackles. The cost of these Tools and Tackles shall be included in the lumpsum Bid Price quoted in Envelope-III(Price) Bid. (c) Attachment 5: Subcontractors Proposed by the Bidder The Bidder shall include in its bid details of all major items of supply or services that it proposes to purchase or sublet and shall give details of the name and nationality of the proposed Subcontractor, including vendor, for each of those items. Bidders are free to list more than one Subcontractor/Vendor against each item of the facilities. Quoted rates and prices will be deemed to apply to whichever Subcontractor/Vendor is appointed, and no adjustment of the rates and prices will be permitted. The Bidder shall be responsible for ensuring that any plant, equipment or services to be provided by the Sub-Contractor/Vendor comply with the requirements of ITB sub-clause 8.1.2 (a). Bidder may refer Annexure-VIII of GTR (Part-C), Section-VI (Technical Specifications) of bidding documents, while filling the details in respect of Sub-Contractors/ Sub-Vendors/ Sub-Suppliers. (d) Attachment 7: Details of Local Agent If a foreign bidder has engaged an Indian agent, it will be required to give the following details in its bid as per the format enclosed in the Bidding Documents. (a) The name and address of the local agent; (b) What Service the agent renders. (e) Attachment 8: Declaration on Demonstration Parameter The declaration on demonstration parameters as per the Employer's format. (f) Attachment 9: Erection Tools and Plant and Safety Equipments & Safety Personal Protective Equipments
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	List of Erection Tools and Plant and Safety Equipments & Safety Personal Protective Equipments which the bidder proposes to bring to site in case the contract is awarded to him. (g) Attachment 10: Essential Data The bidder shall essentially fill the chapter Essential Data, identified in Part-A, Technical Specification, Section-VI. (h) Attachment 11: Guarantee declaration as per the Employer’s format. (i) Attachment 12: Quality Assurance Programme Details regarding the overall quality management & procedures which the bidder proposes to follow during various phases of execution of the contract. (j) Attachment 13: Additional Information Additional Information including alternative bid (without price), which the bidder wishes to provide in his bid. (k) Attachment 14: Detailed work schedule (L2 Schedule) A detailed work schedule (L2 Schedule) for the Project for which Bidder has submitted its Envelope-II (Techno-commercial) bid, in line with major project milestones specified in Sec-III (BDS) and as per requirements of ITB Clause 36. (l) Attachment 15: Deleted (m) Attachment 16: Deleted (n) Attachment 17: Deleted (o) Attachment 17 A: Deleted (p) Attachment 19: Milestone Schedule for PMP Milestone schedule for PMP for super critical Steam Generator Sets and super critical Steam Turbine Generator Sets (q) Attachment 20: Integrity Pact The “Integrity Pact” shall be furnished duly signed in all pages by authorized signatory in accordance with the provision of Integrity Pact specified in ITB Clause 41.0. (r) Attachment 21: Deleted (s) Attachment 22: Deleted (t) Attachment 23: Deleted (u) Attachment 24: Details of Foreign Principals of Indian Bidders		
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	The Bidder shall furnish information with regards to disclosure of the details of its foreign principals or associates (if applicable). (v) Attachment 25: Check list Please note that the Envelope-I (in hard copy), Envelope-II along with Scan copy of the supporting documents for Envelope-II as uploaded by the Bidder should not contain any Bid price content entry. In case any Bid price (basic price) component is exposed in Envelope-I (hard copy), Envelope-II or, any Scan copy of the supporting documents for Envelope-I, then his Bid may be rejected outrightly by the Employer. 8.2 Envelope-III: Price Bid The Price Bids submitted by the Bidder shall comprise of the following: 8.2.1 The Bid Form (Price Bid) as per Section-VII, part 2 of 3, duly completed together with the following attachments and price schedules shall be uploaded on the https://etenders.gov.in/eprocure/app, in the Finance Cover/Envelope: (a) Attachment 1(P): Declaration regarding Import Content in Ex-works price Bidder may note that CIF value of import content in the Ex-works (India) price quoted in Schedule-2 of the bid, if any, shall be necessarily declared by the bidders in Attachment-1P. Bidder may further note that the relevant certificate for claiming the concessional custom duty benefits, if any shall be issued on the aforesaid declaration basis only. In case no such import content is envisaged in the bid or the CIF value of import content to be declared is zero, the bidder shall indicate "NIL" against the CIF value of import content. In cases where no value is indicated by the bidder against the CIF value of import content in Attachment-1P or statement/ any declaration like 'later', 'to be furnished later', 'NA' etc. are indicated by the bidder, in such cases the CIF value of import content in the bid shall be considered as "NIL" for the purpose of issuance of relevant certificate for claiming the concessional custom duty benefits, if any. No further claim in this regard shall be entertained by the Employer. (b) Attachment 1A(P): CIF Value of Construction Equipment to be imported by the Bidder/Assignee Details of Construction Equipment to be imported by the Manufacturer or the bidder/ Assignee, as per the Employer's format. (c) Attachment 2(P): Details of Equipment and Mandatory Spares to be imported from Associate/Collaborator	
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	Details of Equipment (including type test) and Mandatory Spares to be imported from Associate/Collaborator by the Manufacturer or the bidder, as per the Employer's format. (d) Attachment 3(P): Deleted (e) Attachment 4(P): Local Representation If a foreign bidder has engaged an Indian agent, it will be required to give the following details in its bid as per the format enclosed in the Bidding Documents. (a) The name and address of the local agent; (b) What Service the agent renders; and (c) The fixed amount of remuneration for the agent included in the offer; The agency commission shall be indicated in the space provided for in the Price Schedule and will be paid to the bidder's agent in India in Indian Rupees using the Telegraphic Transfer Buying Market rate of exchange ruling on the date of Notification of Award and shall not be subject to any escalation or any further exchange variation, whatsoever and will be payable pro-rata along with the base contract price payment. (f) Attachment 5(P): Price Adjustment Data Details regarding Price Adjustment as per the Employer's format. (g) Attachment 6(P): Check List of documents to be submitted for Envelope-III (Price) Bid 8.3 Price envelope (Envelope-III) should not contain any matter in respect of Technical and / or Commercial aspects other than the details specifically sought in the Price envelope. If the Technical/commercial matters indicated in Price envelope are found to be in contradiction with the details furnished in Techno-Commercial envelope, the details furnished in Techno- Commercial envelope shall prevail. Envelope-III (Excel Sheet) in Template Format" must not be modified/replaced by the bidder and the same should be uploaded after duly filling up the relevant information/declarations/prices as asked in the NIT, else the bidder is liable to be rejected for this tender. 8.4 The Envelope-I&II (Techno-Commercial Bid) & Envelope-III (Price) Bid submitted by the Bidder should be without any deviations and strictly in conformity with the provisions of all bidding documents and amendments/ addenda/ corrigenda/errata/clarifications to the Bidding Documents issued by Employer prior to deadline for submission of bids. A conditional Price Bid shall run the risk of rejection. 9.0 Bid Form and Price Schedules
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10.0 10.1 10.2 10.3 10.3.1	The Bidder shall complete the Bid Form and the appropriate Price Schedules furnished in the bidding documents as indicated therein, following the requirements of ITB Clauses 10 and 11. Bid Prices Unless otherwise specified in the Technical Specifications, Bidders shall quote for the entire facilities on a "single responsibility" basis such that the total bid price covers all the Contractor's obligations mentioned in or to be reasonably inferred from the bidding documents in respect of the design, manufacture, including procurement and subcontracting (if any), delivery, construction, installation, commissioning, Completion of the facilities and conductance of Guarantee tests for the facilities including supply of mandatory spares (if any). This includes all requirements under the Contractor's responsibilities for testing, pre-commissioning and commissioning of the facilities, conducting Guarantee tests and, where so required by the bidding documents, the acquisition of all permits, approvals and licenses, etc.; the operation, maintenance and training services and such other items and services as may be specified in the bidding documents, all in accordance with the requirements of the General Conditions of Contract and Technical Specifications. Bidders are required to quote the price for the commercial, contractual and technical obligations outlined in the bidding documents. Bidders shall give a breakdown of the prices in the following manner: Bidders shall give the total price in the Bill of Quantity (BOQ) (excel format) for the items indicated therein, in respect of following Schedules: <table border="0"> <tr> <td>Schedule No. 1</td><td>Plant and Equipment including Type Tests charges and Mandatory Spares to be supplied from Abroad</td></tr> <tr> <td>Schedule No. 2</td><td>Plant and Equipment including Type Tests charges and Mandatory Spares to be supplied from within the Employer's Country</td></tr> <tr> <td>Schedule No. 3</td><td>Local Transportation including Port handling, Port clearance, Port charges, Custom reconciliation, Inland transit insurance and other local costs incidental to delivery of Plant & Equipment and Mandatory Spares</td></tr> <tr> <td>Schedule No. 4</td><td>Installation Services including Erection and Civil/Structural Works (as applicable), Insurance covers other than inland transit insurance, Safety Aspects/Compliance to Safety Rules and other services as specified in the bidding documents.</td></tr> <tr> <td>Schedule No. 5</td><td>Not used</td></tr> </table>	Schedule No. 1	Plant and Equipment including Type Tests charges and Mandatory Spares to be supplied from Abroad	Schedule No. 2	Plant and Equipment including Type Tests charges and Mandatory Spares to be supplied from within the Employer's Country	Schedule No. 3	Local Transportation including Port handling, Port clearance, Port charges, Custom reconciliation, Inland transit insurance and other local costs incidental to delivery of Plant & Equipment and Mandatory Spares	Schedule No. 4	Installation Services including Erection and Civil/Structural Works (as applicable), Insurance covers other than inland transit insurance, Safety Aspects/Compliance to Safety Rules and other services as specified in the bidding documents.	Schedule No. 5	Not used
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10.3.2	Schedule No. 7 Goods and Services Tax (GST), applicable on Schedules - 2, 3 & 4, not included in bid price. Schedule No. 7A Customs Duty/ Import duty and Goods and Services Tax (GST), applicable on Schedule-1, not included in bid price. Bidders shall note that the plant and equipment included and priced against the items indicated in BOQ in respect of Schedule No.1 and 2 above shall exclude all materials used in civil, building and other construction works, if any. All such materials shall be included and priced in BOQ against the items indicated therein in respect of Schedule No. 4 (Installation Services). Bidders may note that individual Price Schedules (i.e. Schedule Nos. 1, 2, 3, 4, 7 & 7A) containing breakup of prices, need not be furnished along with the Bid/BOQ. Bidder shall furnish the same as per specified format prior to award following the requirements of clause 10.3.3 below.
	Further, Bidders are required to furnish the following Price Schedules (as per format), along with BOQ:
	Schedule No. 6 Recommended Spare Parts
	Schedule No. 9 Schedule of Takeout Price
	Schedule No. 10 Schedule of Unit Rates
	Schedule No. 11 Schedule of Alternatives-NOT USED
	Schedule No. 12 Schedule of Optional Items/Services-NOT USED
10.3.3	Prior to award, successful Bidder shall furnish the detailed break-up of their BOQ price in the Price Schedules (as per format) in respect of Schedule Nos. 1, 2, 3, 4, 7 & 7A (as mentioned at clause 10.3.1 above) along with Schedule No. 8A (Break up of Type Tests charges quoted in Schedule-1) & Schedule No. 8B (Break up of Type Tests charges quoted in Schedule-2).
10.3.4	The quoted prices as per the BOQ (excel format) only shall be used for the purpose of evaluation & award. Bidder to note that Price Schedules mentioned in clause 10.3.3 shall not be submitted along with Bid/BOQ. In case, Price Schedules mentioned in clause 10.3.3 are submitted along with Bid/BOQ, the same shall not be given effect to by Employer. Only the price schedules submitted prior to award following the requirements of clause 10.3.3 above, will be considered to be valid for the purpose of the bid. Further, if there is discrepancy between the BOQ and 'break-up of prices in Schedules' furnished prior to award, the Price quoted in BOQ shall prevail. The
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10.4	detailed price break-up in Schedule shall be corrected, if required, by the successful bidder to match the Item-wise prices as per the BOQ sheet. In the Schedules, Bidders shall give the required details and a breakdown of their price Bid as follows: (a) Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from abroad (Schedule No. 1) shall be quoted on CIF (Indian Port-of-Entry) basis. In addition, the FOB Price and the Type Test Charges shall also be indicated. Further, Bidders seeking qualification on the basis of association / collaboration with manufacturer(s) of particular equipment(s) are required to quote the price of such equipment(s) including spares on CIF (Indian port-of-entry) basis, if the items are to be imported by the manufacturer or the bidder. In case, such equipment and spares are not quoted by the bidder on CIF (Indian port-of-entry) basis, then Employer shall assess the CIF (Indian port-of-entry) price of such equipment and mandatory spares for the purpose of evaluation and accordance of Price Preference. Further, the prices for Mandatory Spares shall be quoted in compliance with the requirements as per the list of Mandatory Spares specified in the Technical Specifications and the Price Schedule-1 of the Bidding documents. (b) Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from within the Employer's country (Schedule No. 2) shall be quoted on EXW (Ex-Factory, Ex-Works, Ex-Warehouse or Off-the- Shelf, as applicable) basis and shall be inclusive of all costs as well as duties and taxes paid or payable on components and raw materials incorporated or to be incorporated in the facilities. Further, the prices for Mandatory Spares shall be quoted in compliance with the requirements as per the list of Mandatory Spares specified in the Technical Specifications and the Price Schedule-2 of the Bidding documents. (c) Local Transportation, Inland Transit Insurance, Port Clearance, Port Handling and Port Charges, Custom reconciliation and other local costs incidental to delivery of the Plant and Equipment including Mandatory Spares shall be quoted in Schedule-3. (d) Installation Services including Erection and Civil & Allied Works (as applicable) shall be quoted separately (Schedule No. 4) and shall include rates or prices for all labour, contractor's equipment, temporary works, materials, consumables and all matters and things of whatsoever nature, charges for insurance covers other than inland transit Insurance, charges for Safety Aspects/Compliance to Safety Rules including operations and maintenance services (if applicable), the provision of operations and maintenance manuals, training of employer's personnel, etc.,
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	and other services, as identified in the Bidding Documents, as necessary for the proper execution of the Installation Services. (i) Bidders are advised to price their bids in such a manner that Installation Price Component of the bid price (excluding Civil/Structural works price) should not be less than 15% and should not be more than 20% of the cumulative total of FOB Price of Main Equipment indicated in Schedule No.1 and Ex-works Price of Main Equipment indicated in Schedule No.2. In case the Installation Price is below the minimum percentage specified above, the amount by which it is lower shall be retained proportionately from the FOB & Ex-Works component of Contract price while releasing payments due on receipt of equipment, and no interest shall be payable on the retained amount. The aforesaid retained amount shall be paid on pro-rata basis upon completion of installation of the respective equipment and its certification by the Project Manager. In case the Installation Price is above the maximum percentage specified above, the amount by which it is higher shall be retained while releasing progressive payments due on installation of equipment, and no interest shall be payable on the retained amount. The aforesaid retained amount shall be paid along with payment due on completion of Trial Operation / Completion of Facilities. (If Prices are quoted in foreign currency, then SBI Bills Selling exchange rate as on the deadline set for submission of bids shall be considered for the purpose of computing installation percentage /retention amount). (ii) Bidders are advised to price their bids in such a manner that the Civil Works Price Component of the bid price (including Site Fabricated Structural works price) should not be less than 20% and should not be more than 30% of the cumulative total of FOB Price of Main Equipment indicated in Schedule No.1 and Ex-works Price of Main Equipment indicated in Schedule No.2. In case the Civil Works Price (including Site Fabricated Structural works price) is below the minimum percentage specified above, the amount by which it is lower shall be retained proportionately from the FOB & Ex-Works component of Contract price while releasing payments due on dispatch of equipment, and no interest shall be payable on the retained amount. The aforesaid retained amount shall be paid on pro-rata basis upon completion of Civil Works including Structural works (if any) corresponding to the respective equipment and its certification by the Project Manager. In case the Civil Works Price (including Site Fabricated Structural Works Price) is above the maximum percentage specified above, the amount by which it is higher shall be retained while releasing progressive payments due on completion of civil works (including Site Fabricated Structural works), and no interest shall be payable on the retained amount. The
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	aforesaid retained amount shall be paid along with payment due on completion of Trial Operation / Completion of Facilities. (If Prices are quoted in foreign currency, then SBI Bills Selling exchange rate as on the deadline set for submission of bids shall be considered for the purpose of computing Civil Works percentage /retention amount). (iii) Bidders are advised to price their bids in such a manner that the component for 'Amount linked to Safety Aspects/ compliance to Safety Rules' should not be less than 1 % of the cumulative total of Service Portion of the Contract, i.e., Civil + Installation/ Erection + Structural Works. In case 'Amount linked to Safety Aspects/ compliance to Safety Rules' is less than aforesaid minimum percentage specified of the cumulative total of Service Portion of the Contract, i.e., Civil + Installation/ Erection + Structural Works, the amount by which it is lower shall be retained proportionately from the other components of Schedule-4 of the Contract price while releasing payments of each RA bill. No interest shall be payable on the amounts linked to Safety Aspects / Compliance to Safety Rules including aforesaid retained amount. The amounts linked to Safety Aspects / Compliance to Safety Rules including aforesaid retained amount shall be payable in part or full based on safety compliance duly certified by Project Manager and Safety-in-charge on quarterly basis. (If Prices are quoted in foreign currency, then SBI Bills Selling exchange rate as on the deadline set for submission of bids shall be considered for the purpose of computing Civil Works percentage /retention amount). (e) Recommended Spare parts shall be quoted separately in Schedule 6 on CIF/EXW basis in accordance with in subparagraph (a) or (b) above. Local Transportation Charges including Inland Transit Insurance and Port Charges etc., for recommended spares shall also be quoted in Schedule-6 and shall not be included in Schedule No. 3 by the bidder. (f) The prices quoted in Schedule Nos. 2, 3 & 4 shall be inclusive of all Taxes, Duties, Levies & charges, except Goods and Services Tax (GST), payable in the Employer's country as of seven (7) days prior to the deadline for submission of bids. Further, all Taxes, Duties, Levies & Charges on the Materials incorporated in Erection and Civil & Allied Works (as applicable) shall also be included in the prices quoted in Schedule No. 4 & no Separate payment on this account, whatsoever, shall be made by Employer. Goods and Services Tax (GST) applicable on goods and services specified in Schedule Nos. 2, 3 & 4 shall not be included in respective schedules, but shall be quoted separately in Schedule No. 7. The Goods & Services Tax (GST) quoted by the bidder in Schedule No. 7 shall be as applicable in the Employer's country as on seven (7) days prior to the deadline for submission of Bids. Customs Duty/ Import duty and Goods and Services Tax (GST) applicable on goods and services specified in Schedule No. 1 shall not be included in the schedule but shall be quoted separately in Schedule No. 7A. The Customs Duty/	
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	Import duty and Goods & Services Tax (GST) quoted by the bidder in Schedule No. 7A shall be as applicable in the Employer's country as on seven (7) days prior to the deadline for submission of Bids. The detailed breakup of items along with rate of import duty and GST is required to be submitted prior to the placement of award. The Employer, as a consignee shall furnish promptly necessary clarifications and documents as may be required to be furnished by the consignee for the purpose of customs clearance. Due Input Tax credits under GST as per the relevant Govt. Policy, wherever applicable, shall be taken into account by the Bidder while quoting his price. 10.5 The terms EXW, FOB, CIF, etc., shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce, 33-43 avenue du Président Wilson 75116, Paris, France. 10.6 Custom Duty Benefits for Power Projects 10.6.1 Bidder may ascertain the availability of Custom Duty benefits under the Customs Tariff Act, available on import of Raw Materials/ Sub- Assembly/ Items, which are required for the manufacture and supply of plant and equipment to be incorporated in the facilities under the Contract. - for Power Projects Bidder may ascertain the availability of Custom Duty benefits under Chapter 98.01 of the Customs Tariff Act, available on import of Raw Materials/ Sub- Assembly/ Items, which are required for the manufacture and supply of plant and equipment to be incorporated in the facilities under the Contract. Based on the application and supporting documents as submitted by the Contractor following the relevant policies of Govt. of India, the Employer will forward the recommendation letter to MOP, GOI for issuance of Essentiality Certificate. For issuance of such Essentiality Certificate/ recommendatory letter by the Employer, the bidders shall be required to indicate the import content included in their bid price, in Attachment-1P. However, the bidder shall itself be responsible for obtaining such certificate from the concerned department /ministry.” For issuance of such Certificate by the Employer, the bidders shall be required to indicate the import content included in their bid price, in Attachment-1P of Price Bid. The relevant Certificate will be issued on this basis only. In addition, Bidder may also like to ascertain the availability of Custom Duty Benefits available for import of construction Equipment, if any, as per the extant Customs Acts & Notification of Govt. of India. Where the Bidder has quoted taking into account the Custom Duty benefits available for import of Construction Equipment, he must give all information required for issue of relevant Certificate in Attachment-1A(P). The relevant Certificate will be issued on this basis only and no subsequent change will be permitted. However, if the above certificates are required to be issued by any department/ministry of Government of India or State Government where the Project is located other than		
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10.7	Employer, the bidder shall itself be responsible for obtaining such certificate from the concerned department/ministry. In such a case, the Employer may issue a letter of recommendation. Further, the bidders shall themselves be solely responsible for availing the above benefits, which they have considered in their bid. In case of failure of the bidders to receive the benefits partly or fully from the Govt. of India and/or in case of any delay in receipt of such benefits and/or withdrawal of such benefits by the Govt. of India, the Employer shall neither be liable nor responsible in any manner whatsoever. Price Basis Prices quoted by the Bidder shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labour, material, etc. in accordance with the procedures specified in relevant appendix to the Form of Contract Agreement (Price Adjustment). A bid submitted with a fixed price quotation will not be rejected, but the price adjustment will be treated as zero. The price adjustment provision will not be taken into consideration in bid evaluation. Bidders must indicate the name, source, origin of labour and material indices along with their base values in relevant attachment (Price Adjustment) to Bid.
11.0	Bid Currencies
11.1	Prices shall be quoted in the following currencies: (a) Plant and equipment including type tests and mandatory spares covered under ITB Sub-Clauses 10.4(a) & 10.4 (b) and EXW/CIF price of recommended spare parts covered under ITB Sub-Clause 10.4 (e) shall be quoted in any currency subject to 11.1 (d). Domestic Bidders while quoting in foreign currency must comply with the requirement as laid down by Govt. of India from time to time. (b) Local transportation, inland transit insurance and other local costs incidental to delivery of the plant and equipment including mandatory spares covered under ITB Sub-Clause 10.4 (c) and Installation services covered under ITB Sub-Clause 10.4 (d) shall be quoted in local currency. However, foreign component, if any, of Installation Services (excluding civil, structural & allied works) covered under ITB Sub-clause 10.4 (d) may be quoted in foreign currency. (c) Local Transportation, inland transit insurance and other local costs incidental to delivery of recommended spares covered under ITB Sub-Clause 10.4 (e) shall be quoted in Local Currency. (d) If the Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly, but use only three foreign currencies (i.e. USD, Euro & JPY only), other than the local content portion of the bid price which shall be quoted in Local currency only. (e) Not Used.
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)
12.0	Bid Security
12.1	The Bidder shall furnish, as part of its Bid, a Bid Security (Account Payee Demand Draft / Banker's Cheque or Bank Guarantee from a Commercial Bank/ Net Banking transfer/ Online payment/Insurance Surety bond in an acceptable form, as applicable) in a separate sealed envelope in the amount and currency as stipulated in the Bid Data Sheet (BDS). In case bid security amount is deposited as EFT, Proof of e-payment of Bid Security, shall be submitted in separate envelope within the Envelope-I (hard copy documents) alongwith uploading of same in the e-tendering portal. The Bid Security shall, at the Bidder's option, be in the form of a bank guarantee from any of the banks specified in the Bid Data Sheets or an Insurance Surety Bond from an Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI). In case of Account Payee Demand Draft / Banker's Cheque, the same shall be issued/made in favour of Damodar Valley Corporation payable at Kolkata. In case Bidder submits bid security amount in EFT mode, the same shall be deposited in the following bank details: (a) Bank Name: United Bank of India (as now Punjab National Bank) (b) Account Number:: 0082250010682 (c) Account Name: DAMODAR VALLEY CORPORATION (d) Branch: New Manicktala Branch (e) Bank Address: New Manicktala Branch, VIP Road, Kolkata-7000054 (f) IFSC Code: PUNB0008220 ['0' Stands for zero] (g) MICR No.: 700027099
12.2	The Bid Security shall, at the Bidder's option, be in the form of a bank guarantee from any of the banks specified in the Bid Data Sheets or an Insurance Surety Bond from an Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI) or any other form as specified in Para 12.1 above. In case of Foreign Bidders, the Bid Security can be from any other Bank also in addition to the Banks specified in the Bid Data Sheets. If the Bank Guarantee is from a Bank not specified in the Bid Data Sheets, then the Bank Guarantee shall be confirmed by any of the Banks specified in the Bid Data Sheets. The format of the Bank Guarantee/ Insurance Surety Bond shall be in accordance with the form of bank guarantee/ Insurance Surety Bond towards bid security included in the Bidding Documents. Bid Security shall remain valid for a period of forty-five (45) days beyond the original Bid validity period and beyond any extension of bid validity subsequently requested under relevant clause of ITB.
12.3	Not Used.
12.4	Any bid not accompanied by an acceptable bid security in a separate sealed envelope shall be rejected by the employer as being non-responsive. In case, the bid security is submitted as EFT, Bidder to submit Proof of e-payment of Bid Security
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	in separate envelope within the Envelope-I (hard copy documents) alongwith uploading of same in the e-tendering portal.				
12.5	BG against Bid Security issued by a Bank outside India needs to bear stamp duty of appropriate value applicable to the place in Employer's Country where BG is to be submitted. The BG may be got adjudicated by the employer from Collector of Stamps, within 3 months of arrival of BG in India. Expenses incurred in this regard shall be borne by Employer. Insurance Surety Bond against Bid Security issued by an Indian Insurance company outside India needs to bear stamp duty of appropriate value applicable to the place in Employer's Country where Insurance Surety Bond is to be submitted. The Insurance Surety Bond may be got adjudicated by the employer from Collector of Stamps, within 3 months of arrival of Insurance Surety Bond in India. Expenses incurred in this regard shall be borne by Employer.				
12.6	Subject to clause 12.8 below, the Bid Security of the Bidder whose Techno-Commercial Bid has not been found acceptable, shall be returned, within 15 days after the finalisation of tender. The Bid Security of the bidders who are unsuccessful after opening of Price Bids shall be returned expeditiously.				
12.7	The Bid Security of the successful Bidder to whom the contract is awarded will be returned when the said Bidder has signed the Contract Agreement and has furnished the required Performance Securities pursuant to relevant clauses of ITB.				
12.8	The Bid Security may be forfeited. a) If the Bidder withdraws or varies its Bid during the period of Bid validity; b) If the Bidder does not accept the correction of its Bid Price pursuant to ITB Sub-Clause 26.2. c) If the Bidder refuses to withdraw, without any cost to the Employer, any deviation, variation, additional condition or any other mention anywhere in the bid, contrary to the provisions of bidding documents; d) In the case of a successful Bidder, if the Bidder fails within the specified time limit to furnish the required Contract Performance Guarantee/Security Deposit in accordance with relevant clause of ITB. e) Non-execution of Contract Agreement by the Contractor within 30 days from the date of issue of Letter of Award/Notification of Award, due to fault of the Contractor. f) In case the L1 bidder for any item fails to produce the documents within the specified 15 days in case of global tenders, or if any of the information furnished by L1 bidder on-line is found to be false by the Tender Committee during verification of documents. g) If the bidder/his representatives commit any fraud while competing for this contract pursuant to Fraud Prevention Policy of Employer. h) In case the Bidder/Contractor is disqualified from bidding process in terms of Section 3 and 4 of Integrity Pact (IF APPLICABLE). i) If the bidder after having been issued the Notification of Award (NOA)/ Letter of Intent (LOI)/ Letter of Award (LOA) within the validity period of their Bid, does not furnish their acceptance/acknowledgement to NOA/LOI/LOA.				
<table><tr><td>KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB</td><td>EPC PACKAGE SECTION – II (ITB)</td><td>Page 22 of 43</td></tr></table>			KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB	EPC PACKAGE SECTION – II (ITB)	Page 22 of 43
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)
12.9	Confirmation of BG through Structured Financial Messaging System (SFMS)/SWIFT While issuing the physical BGs, the Bidder's Bank shall also send electronic message through secure SFMS (in case of BGs issued from within India) or SWIFT (in case of BGs issued from outside India) to Employer's Beneficiary Bank whose details are provided herein below: (i) Bank Name: United Bank of India (as now Punjab National Bank) (ii) Branch: New Manicktala Branch (iii) Bank Address: New Manicktala Branch, VIP Road, Kolkata-7000054 (iv) IFSC Code: PUNB0008220 ['0' Stands for zero] BG issuing/amending bank must send the BG advice in the form of message format via SFMS (Structured Financial Messaging System) as provided by RBI. The format of the message for confirmation of the BG shall be as below: BG advising message: IFN 760COV/ IFN 767COV via SFMS Field Number: Particulars (to be mentioned in Row 1) 7037: DVC BG (unique identifier)
13.0	Period of Validity of Bids (Techno-Commercial Bid and Price Bid)
13.1	The Bid (comprising Techno-Commercial and Price envelope) shall remain valid for a period of one hundred eighty (180) days from the deadline set for submission of Bid. The bid valid for a shorter period shall be rejected by Employer as being non responsive.
13.2	The bidder is required to keep the prices of recommended spares covered under Price Schedule No. 6 valid for a period of six (6) months after Notification of Award for main equipment and mandatory spares.
13.3	In exceptional circumstances, Employer may solicit the Bidder's consent to an extension of the bid validity period. The request and responses thereto shall be made in writing by post, or e-mail. If a Bidder accepts to extend the period of bid validity, the validity of bid security shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.
14.0	Format and Signing of Bid
	The bid including all documents uploaded on the website https://etenders.gov.in/eprocure/app shall be digitally certified using Class-III signature by a duly authorised representative of the Bidder to bind him to the contract. The authorization shall be indicated by written power of attorney as per ITB Clause 8.1.1 (b) and shall be submitted in physical form in a separate sealed envelope prior to the deadline for submission of bids.
D. Submission of Bids	
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)		
15.0	The Bid [comprising the Bid Form as per Section-VII, Part 1 of 3 and 2 of 3, together with its Attachments (Techno-commercial and price) and BOQ/Price Schedules] shall be submitted simultaneously at the e-tender portal through e-tender mode in the manner specified elsewhere in bidding document. No Manual/ Physical Copy of the Bid shall be acceptable, except the documents specified to be submitted in physical form as per ITB Clause 8.1.1. Bidder shall upload the completed Bid Form, Attachments pertaining to Techno-commercial bid along with all annexures under 'Technical Cover' at the e-Tender Portal. The Attachments to Price Bid, duly completed together with BOQ (excel format) shall be uploaded in 'Finance cover' at the e-Tender Portal. Further, the detailed break-up of BOQ price in the Price Schedules (if provided along with Bidding documents) shall also be furnished in 'Finance cover'. Bidders may note that Attachments to Price Envelope together with BOQ (excel sheet)/Price Schedule <u>should not be</u> uploaded in the 'Technical cover' at the e-Tender Portal. Bidder to further ensure that documents uploaded online are being downloaded properly. Employer shall not be responsible for corrupt files, if any, uploaded online by bidder. Further file related to particular Attachment/Schedule including their annexures/ appendices, if any, shall be given name of that Attachment/Schedule only.		
15.1	Sealing and Marking of Physical Documents		
15.1.1	Documents to be submitted in physical form (as brought out at ITB clause 8.1.1) i.e., Envelope-I: Techno- Commercial Bid (hard copies documents in offline mode) shall be sealed and marked in the following manner: (i) The Bid Security/ "Proof of e-payment of Bid Security" furnished in accordance with ITB Clause 12 shall be sealed in a separate envelope duly marking the envelope as "ATTACHMENT-1: BID SECURITY". (ii) The 'Tender Fee' [in form of Crossed Account Payee Demand Draft in favour of "Damodar Valley Corporation", payable at Kolkata]/"Proof of Tender Fee payment through NEFT/RTGS" in accordance with provisions of Bid Documents at ITB 8.0 and value as mentioned at IFB shall be sealed in a separate envelope duly marking the envelope as 'ATTACHMENT 1A: TENDER FEE' (iii) The 'No Deviation Certificate' as per ATTACHMENT-6 duly signed and stamped by the signatory authorized to sign the bid, shall also be sealed in a separate Envelope entitled "ATTACHMENT-6: NO DEVIATION CERTIFICATE" (iv) The 'Integrity Pact' as per ATTACHMENT-20 duly signed by the signatory authorized to sign the bid, shall also be sealed in a separate envelope entitled "ATTACHMENT-20: INTEGRITY PACT".		
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	(v) All other Original documents (along with 2 copies) required to be submitted in physical form in line with ITB Clause 8.1.1 shall be sealed in a separate envelope duly marking the envelope as “Techno-Commercial Bid – Physical Documents” The envelopes shall then be sealed in an outer envelope.			
15.1.2	The inner and outer envelopes shall: (a) be addressed to the Employer at the address given in the Bid Data Sheet (BDS), and (b) bear the Package name indicated in the Bid Data Sheet (BDS), the Invitation for Bids number indicated in the Bid Data Sheet (BDS), and the statement "DO NOT OPEN BEFORE [date]," to be completed with the time and date specified in the Bid Data Sheet (BDS), pursuant to ITB clause 16.			
15.1.3	The inner envelopes shall also indicate the name and address of the Bidder.			
15.1.4	If the outer envelope is not sealed and marked in the manner specified above, the Employer will assume no responsibility for its misplacement.			
16.0	Deadline for Submission of Bids			
16.1	Bids (both Techno-Commercial and Price) must be submitted online at e-tender portal not later than the time and date stated in the e-Tender Portal https://etenders.gov.in/eprocure/app.			
16.2	The physical documents in line with ITB Clause 8.1.1 shall be submitted in physical form before stipulated bid submission time at the address specified in BDS. Employer shall not be liable for loss/non-receipt/late receipt of above documents in postal transit.			
16.3	The Employer may, at its discretion, extend this deadline for submission of bids by amending the bidding documents in accordance with ITB Sub-Clause 6.3, in which case all rights and obligations of Employer and Bidders will thereafter be subject to the deadline as extended.			
17.0	Late Bid Security Not Used.			
18.0	Modification and Withdrawal of Bids			
18.1	The bidder may withdraw or modify its bid after the bid submission as per provision available in the e-tender web site. However, no bid can be withdrawn or modified subsequent to the deadline prescribed for submission of bids. Bidder may modify and re-submit its bid prior to the deadline prescribed for submission of bids. However, if the bidder once withdraws its bids, it cannot be submitted again.			
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)
18.2	Notwithstanding the provisions specified in ITB Sub-Clause 12.8, if the Lowest Evaluated bidder withdraws its bid prior to the issuance of Notification of Award (NOA), such bidder/contractor shall also be dealt as per the provisions of Debarment Policy."
18.3	No bid may be withdrawn in the interval between the bid submission deadline and the expiration of the bid validity period specified in ITB Clause 13. Withdrawal of a bid during this interval may result in the Bidder's forfeiture of its bid security, pursuant to ITB Sub-Clause 12.8.
E. Bid Opening and Evaluation	
19.0	Opening of Bids
19.1	<u>Envelope-I and II (Techno-Commercial) Bid Opening</u>
19.1.1	The Employer will first open Techno-Commercial Bid in the presence of bidders' representatives who choose to attend the opening at the time, on the date and at the place specified in the Bid Data Sheet (BDS). In the event of the specified date for the opening of bids being declared a holiday for Employer, the bids will be opened at the appointed time on the next working day. All important information and other such details as Employer, at its discretion, may consider appropriate, will be announced at the opening.
19.1.2	In case requisite Bid Security pursuant to ITB Clause 12, Tender Fee as per clause 8.0, No Deviation Certificate as per clause 8.1 and/or Integrity Pact (IP) as per provision of Integrity Pact specified in ITB Clause 41.0 are not submitted before the stipulated bid submission closing date and time then Bid shall be rejected by the Employer as being non-responsive and shall not be opened.
19.2	<u>Envelope-III (Price) Bid Opening</u>
19.2.1	After the evaluation process of Techno-Commercial bid is completed, Employer will inform in writing the eligible Bidders regarding date, time and venue set for the opening of Price Bid. Bidders, whose Techno-Commercial Bid is not substantially responsive or does not meet the Qualification Requirements set forth in the bidding documents or who are debarred under Employer's Debarment Policy relating to some other tender/contract, shall also be informed that their bid has been rejected and their bid security shall be returned/refunded in accordance with clause 12.6 of ITB.
19.2.2	Price bids of those Bidders, who have been considered qualified and whose Techno-Commercial Bid found to be responsive, will be opened online. The Employer will open Price Bids at the time, on the date and at the place specified by the Employer. In the event of the specified date for the opening of bids being declared a holiday for the Employer, the bids will be opened at the appointed time on the next working day. All important information and other such details as the Employer, at its discretion, may consider appropriate, will be announced at the opening.
19.2.3	The participating bidders will be able to view the bid prices of all the bidders after online opening of Price Bids by Employer.
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20.0	Clarification on Bids During bid evaluation, the Employer may, at its discretion, ask the Bidder for a clarification of its bid including documentary evidence pertaining to the reference plants declared in the bid for the purpose of meeting Qualifying Requirement specified in Bid Data Sheet. The request for clarification and the response shall be in writing, and no change in the price or substance of the bid including substitution of reference plants in the bid by new/additional plant for conforming to Qualifying Requirement shall be sought, offered or permitted.		
21.0	PRELIMINARY EXAMINATION OF ENVELOPE-I and ENVELOPE-II (TECHNO-COMMERCIAL) BID		
21.1	Employer will examine the bids to determine whether they are complete, whether required securities have been furnished, whether the documents have been properly signed and whether the bids are generally in order.		
21.2	Prior to the detailed evaluation, EMPLOYER will initially determine whether each Techno-Commercial bid is of acceptable quality, is generally complete and is substantially responsive to the bidding documents. For purposes of this determination, a substantially responsive bid is one that conforms to all the terms, conditions and specifications of the bidding documents without material deviations, objections, conditionalities or reservations. A material deviation, objection, conditionality or reservation is one (i) that affects in any substantial way the scope, quality or performance of the contract; (ii) that limits in any substantial way, inconsistent with the bidding documents, the Employer's rights or the successful Bidder's obligations under the contract; or (iii) whose rectification would unfairly affect the competitive position of other Bidders who are presenting substantially responsive bids.		
21.3	No deviation, whatsoever, is permitted by EMPLOYER to any provisions of Bidding Documents. Bidders are required to furnish a certificate indicating their compliance to all the provisions of the bidding documents in Attachment-6 (No Deviation Certificate). The Bidders are advised that while making their Bid proposals and quoting prices, all conditions may appropriately be taken into consideration. In case any deviations, variations and additional conditions etc. or any mention contrary to Bidding Documents and its Amendments/ Clarifications/Addenda/Errata (if any) found anywhere in the bid proposal, implicit/ explicit, shall not be given effect to and the same shall stand unconditionally withdrawn by the Bidder, without any cost implication to the Employer and it will be considered that the Bid complies with all the requirement in the bidding documents and the bidder shall be required to comply with all terms, conditions and specifications of the bidding documents without any extra cost to the Employer irrespective of any mention to the contrary, anywhere else in the bid.		
21.3.1	The Employer may waive any minor informality, nonconformity or irregularity in a bid that does not constitute a material deviation.		
21.3.2	Bidders shall certify their compliance to ITB Clause "Restrictions on procurement from a		
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)
	Bidder of a country which shares a land border with India” by certificate of ‘No Deviation’ [Attachment-6: NO DEVIATION CERTIFICATE] Submission of above certificate shall be considered as Bidder's confirmation that Bidder has read and understood the ITB Clause regarding “Restrictions on procurement from a Bidder of a country which shares a land border with India” and its bid is in compliance to this clause. In case it is established that Bidder has provided any false information in pursuance of the aforesaid ITB Clause, while competing for this contract, then its bid shall be rejected and bid security shall be forfeited. In case of a successful bidder, if it is established that the Bidder has not complied with terms of aforesaid ITB Clause, during execution of contract, this would be considered as fraudulent practices as mentioned in Debarment policy as per Annexure II of SCC. 21.4 The Employer's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence. If a bid is not substantially responsive, it will be rejected by Employer, and may not subsequently be made responsive by the Bidder by correction of the nonconformity. 22.0 QUALIFICATION 22.1 Bidders shall certify their compliance on "Qualifying Requirements" of Employer by certificate of 'No Deviation' [Attachment-6: NO DEVIATION CERTIFICATE] Submission of above attachment shall be considered as bidder's confirmation to the following conditions: (a) The number of reference Plants/Orders quoted by Bidder in Attachment- 3A of the bid, for establishing compliance to the specified Qualifying Requirement (QR), are in accordance with the provision specified in Bid Data Sheets. (b) The reference Plants/ Orders/ declared, shall only be considered for evaluation/ establishing compliance to Qualifying Requirement (QR). Any reference Orders declared more than as specified in Bid Data Sheets shall not be considered for evaluation/establishing compliance to Qualifying Requirements. (c) No change or substitution in respect of reference Plants/Orders for meeting the specified Qualifying Requirement (QR) shall be offered by the bidder. Bidders are required to furnish the details of the past experiences based on which selection is to be made as per format enclosed in the bidding documents for the same and enclose relevant documents like copies of authentic work order, completion certificate, agreements etc. supporting the details/data provided in the format. No claims without supporting documents shall be accepted in this regard. However if any of the reference work pertains to the Contract(s)/Works executed by Bidder for NTPC/Employer in the past then in respect of such Contract(s)/ Works Bidder shall not be required to enclose Client Certificate (s) along with its bid.
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)		
22.2	The Employer will ascertain to its satisfaction whether bidders determined as having submitted responsive Techno-Commercial bids are qualified to satisfactorily perform the contract in terms of the qualifying requirements stipulated in the Bid Data Sheet (BDS). The determination will take into account the Bidder's financial, technical and production capabilities and past performance. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB Sub-Clause 8.1.2 (a), as well as such other information as the Employer deems necessary and appropriate. Notwithstanding anything stated anywhere else in the bidding documents, Employer reserves the right to seek in writing information relating to qualifying requirements in addition to details contained in the bid. The bidder shall furnish required information promptly to the Employer.		
22.3	A negative determination will result in rejection of the Bidder's Techno- Commercial Bid in which event Employer will not open the Price Bid of the concerned bidder and his bid security shall be returned in accordance with ITB clause 12.6.		
23.0	EVALUATION OF ENVELOPE-I and ENVELOPE-II (TECHNO-COMMERCIAL) BIDS		
23.1	The Employer will carry out a detailed evaluation of the Techno-Commercial bids in order to determine whether the technical aspects are in accordance with the requirements set forth in the bidding documents. In order to reach such a determination, the Employer will examine and compare the technical aspects of the bids on the basis of the information supplied by the bidders, taking into account the following factors: (a) overall completeness and compliance with the Technical Specifications and Drawings; suitability of the facilities offered in relation to the environmental and climatic conditions prevailing at the site; and quality, function and operation of any process control concept included in the bid. The bid that does not meet minimum acceptable standards of completeness, consistency and detail will be rejected for non-responsiveness. (b) achievement of specified performance criteria by the facilities. (c) type, quantity and long-term availability of mandatory and recommended spare parts and maintenance services. (d) any other relevant factors, if any, listed in the Bid Data Sheets, or that the Employer deems necessary or prudent to take into consideration. (e) Functional Guarantees Bidders shall submit declaration regarding functional guarantees (in relevant attachments) of the proposed facilities in response to the Technical Specifications. In case a minimum (or a maximum, as the case may be) level of functional guarantee is specified in the Technical Specifications for the bids to be considered responsive, bids offering plant and equipment with such functional guarantees less (or more) than the minimum (or maximum) specified may be rejected. (f) Compliance with the time schedule as specified in the bidding documents.		
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	(g) Demonstration Parameters Bidders shall state the demonstration parameters for the proposed facilities in response to the Technical Specifications. In case a minimum (or a maximum, as the case may be) level of parameters is specified in the Technical Specifications for the bids to be considered responsive, bids offering plant and equipment with such functional guarantees less (or more) than the minimum (or maximum) specified may be rejected. Bidder may note that deviations, variations and additional conditions etc. found anywhere in the bid, shall not be given effect to in evaluation and it will be assumed that the Bidder complies with all the conditions of Bidding Documents. In case the Bidder refuses to withdraw deviations, implicit or explicit, found anywhere in the bid, without any financial implication whatsoever to the Employer, the bid shall be rejected and bid security shall be forfeited.	
24.0	DELETED	
25.0	DELETED	
26.0	PRELIMINARY EXAMINATION OF ENVELOPE-III (PRICE) BID	
26.1	After opening of Price bids, The Employer will examine the Price bids to determine whether they are complete, whether any computational errors have been made, and whether the bids are generally in order.	
26.2	Arithmetical errors will be rectified on the following basis. In Price Schedules, if there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between subtotals and the total price, the unit or subtotal price shall prevail and the total price shall be corrected accordingly. If there is a discrepancy between words and figures, the amount in words will prevail. All errors in totaling in the amount column of Price Schedules and in carrying forward totals shall be corrected. The bid sum so altered shall, for the purpose of bid, be substituted for the sum originally bid and considered for evaluation and comparison of the bids and also for acceptance of the bid, instead of the original sum quoted by the Bidder. If the Bidder does not accept such correction of errors, its bid will be rejected and the bid security will be forfeited in accordance with ITB Sub- Clause 12.8.	
26.3	Conversion to Single Currency To facilitate evaluation and comparison, the Employer will convert all bid prices, expressed in the amounts in various currencies in which the bid price is payable, to a single currency. The currency selected for converting bid prices to a common base for the purpose of evaluation, along with the type of transaction, source and date of the exchange rate to be used, is specified in the Bid Data Sheets.	
27.0	EVALUATION OF ENVELOPE-III (PRICE) BID	
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27.1	The comparison shall be of the EXW Price of Plant and Equipment including Type Test Charges and Mandatory Spares offered from within the Employer's country, such price to include all costs as well as duties and taxes paid or payable on components and raw materials incorporated or to be incorporated in the Plant and Equipment including Mandatory Spares plus the price of the CIF named port of destination (or CIP Border point or CIP named place of destination) of the Plant and Equipment including Type Test Charges and Mandatory Spares offered from outside the Employer's country, plus the cost of Local Transportation, Insurance Covers, all Installation Services including Civil, Architectural & Structural works, training charges, AMC / AMS (Annual Maintenance Services), amount linked to safety etc. required under the Contract, plus the Goods and Services Tax (GST) (applicable on goods and services quoted in Schedules-2, 3 & 4) specified by the Bidder in Schedule-7 and Customs Duty/ Import Duties and GST (applicable on CIF Price quoted in Schedule-1), specified by the bidder in Schedule-7A, in its Bid. The Price of recommended spare parts quoted in Price Schedule No. 6 shall not be considered for evaluation of Bids.															
27.2	The Employer's evaluation of a bid will take into account the following: (i) The bid prices indicated in Price Schedules Nos. 1 through 4; (ii) Price Schedule No. 7 & 7A; (iii) The corrections pursuant to ITB sub-clause 26.2; (iv) Not used (v) Purchase preference pursuant to ITB Clause 27.6															
27.3	Not used															
27.4	Any adjustments in price that result from the above procedures shall be added, for purposes of comparative evaluation, to arrive at an "Evaluated Bid Price".															
27.5	An illustrative method of evaluation as explained above is explained below: <table><tr><th colspan="2">Illustrative Method of Evaluation</th><th>-(Equivalent INR)-</th></tr><tr><td>1.</td><td>Quoted Bid Price without taxes & duties (after considering arithmetical corrections)</td><td></td></tr><tr><td>(i)</td><td>CIF price including type test charges for equipment and mandatory spares (Schedule-1)</td><td>N1</td></tr><tr><td>(ii)</td><td>Ex-works price including type test charges for equipment and mandatory spares (Schedule-2)</td><td>N2</td></tr><tr><td>(iii)</td><td>Price for inland transportation including inland transit insurance for equipment and mandatory spares (Schedule-3)</td><td>N3</td></tr></table>	Illustrative Method of Evaluation		-(Equivalent INR)-	1.	Quoted Bid Price without taxes & duties (after considering arithmetical corrections)		(i)	CIF price including type test charges for equipment and mandatory spares (Schedule-1)	N1	(ii)	Ex-works price including type test charges for equipment and mandatory spares (Schedule-2)	N2	(iii)	Price for inland transportation including inland transit insurance for equipment and mandatory spares (Schedule-3)	N3
Illustrative Method of Evaluation		-(Equivalent INR)-														
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<table><tr><td>KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB</td><td>EPC PACKAGE SECTION – II (ITB)</td><td>Page 31 of 43</td></tr></table>			KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB	EPC PACKAGE SECTION – II (ITB)	Page 31 of 43											
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	(iv)	Price for Installation Services/ Civil Works/ Others (Schedule-4)	N4	
	(v)	Total Price	N (N1+N2+N3+N4)	
	2.	Taxes & Duties (not included in 1 above)		
	(i)	Customs Duty/ Import Duty and GST on CIF Price (Schedule-1) as quoted in schedule 7A	P1	
	(ii)	GST (on Schedule 2, 3 & 4) as quoted in Schedule-7	P2	
	(iii)	Total	P (P1+P2)	
	3.	Evaluated Bid Price	FEP (N+P)	
	Note: Aforesaid method of evaluation shall be equally applicable for all bidders.			
	27.6	PREFERENCE TO MAKE IN INDIA AND GRANTING OF PURCHASE PREFERENCE TO LOCAL SUPPLIERS		
	No Purchase preference shall be applicable as specified in Annexure–IV to Section-III (Bid Data Sheet) of Bidding Documents.			
28.0	Hard Copy (Offline) Submission of supporting documents:			
Submission of the hard copies in Original / “self-authenticated and attested by Public Notary” of all the supporting documents for Envelope-II (Techno-commercial) Bid by the lowest evaluated Bidder for DVC’s verification and record, who was asked to submit the 15 days from date of issuance of letter after opening of Envelope-III. No additional time will be allowed to the lowest evaluated Bidder for producing the required documents.				
The Employer will intimate the lowest evaluated Bidder through e-mail to submit all hard copies of the Original / “self-authenticated and attested by Public Notary” of all the supporting documents for Envelope-II as submitted by the Bidder as scan copies as asked in the bidding document, on any working day within 15 days from date of issuance of letter after opening of Envelope3 (Excel Sheet).				
In case the lowest evaluated Bidder fails to produce the documents within the specified period or if any of the information furnished by lowest evaluated Bidder on-line is found to be false during verification of documents, which changes the eligibility status of the bidder, the following action shall be taken.				
“The defaulting such lowest evaluated Bidder will be liable with forfeiture of EMD with caution letter to refrain in future and in event of 2nd instances EMD will be forfeited and banning of lowest evaluated Bidder for one year from participating in future tenders.”				
29.0	Contacting the Employer			
29.1	Subject to ITB Clause 20, no Bidder shall contact Employer on any matter relating to its bid, from the time of the opening of bids to the time the contract is awarded.			
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)			
29.2	Any effort by a Bidder to influence Employer in Employer's bid evaluation, bid comparison or contract award decisions may result in rejection of the Bidder's bid.			
	F. Award of Contract			
30.0	Award Criteria			
30.1	Subject to ITB Clause 31 (Employer's Right to Accept any Bid and to Reject any or all bids) and Employer's Debarment Policy, the Employer will award the Contract to the successful Bidder [whose Techno-Commercial bid has been determined to be substantially responsive and the bidder is determined to be qualified to perform the Contract satisfactorily and whose Price Bid is determined to be the lowest evaluated bid, as per methodology indicated in Annexure-IV to BDS. No contract shall be awarded to a bidder against whom a Debarment Order has been issued as per Employer's Debarment Policy.			
30.2	The Bidder will be required to comply with all requirements of the Bidding Documents and subsequent amendments thereof, without any extra cost to the Employer, failing which his bid security will be forfeited.			
30.3	Employer reserves the right to vary the quantity of any of the Spares and/or delete any item of Spares altogether at the time of Award of Contract. Further, Employer may place the award for any mandatory spares with NOA and/or within three years from the date of NOA as per mutually agreed despatch schedule and as per the price quoted by the bidder in their bid in accordance with the relevant clauses.			
30.4	The mode of contracting with the successful bidder will be as per stipulation outlined in GCC Clause 3.6 and briefly indicated below: In the case of successful Domestic Bidder, the award shall be made as follows: - First Contract: For CIF (Indian port-of-entry) supply of all Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from abroad. - Second Contract: For Ex-works (India) supply of all Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from within the Employer's country. - Third Contract: For providing all services i.e. port handling, port clearance and port charges for the imported goods, Custom reconciliation, further loading, inland transportation for delivery at site, inland transit insurance, unloading, storage, handling at site, installation, insurance covers other than inland transit insurance, testing, commissioning and conducting Guarantee tests in respect of all the equipments supplied under the 'First Contract' and the 'Second Contract', and all Installation Services including Civil, Architectural & Structural works, training charges, AMC / AMS (Annual Maintenance Services), amount linked to safety required under the Contract etc as specified in the Contract Documents.			
<table><tr><td>KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB</td><td>EPC PACKAGE SECTION – II (ITB)</td><td>Page 33 of 43</td></tr></table>		KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB	EPC PACKAGE SECTION – II (ITB)	Page 33 of 43
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	All the above Contracts will contain a cross-fall breach clause specifying that breach of one Contract will constitute breach of the other Contracts which will confer a right on the Employer to terminate the other Contracts also at the risk and the cost of the Contractor. In the case of successful Foreign Bidder, the award shall be made as follows: - First Contract: For CIF (Indian port-of-entry) supply of all Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from abroad. - Second Contract: For Ex-works (India) supply of all Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from within the Employer's country. - Third Contract: For providing all services i.e. port handling, port clearance and port charges for the imported goods, Custom reconciliation, further loading, inland transportation for delivery at site, inland transit insurance, unloading, storage, handling at site, installation, insurance covers other than inland transit insurance, testing, commissioning and conducting Guarantee tests in respect of all the equipments supplied under the 'First Contract' and the 'Second Contract', and all Installation Services including Civil, Architectural & Structural works, training charges, AMC / AMS (Annual Maintenance Services), amount linked to safety required under the Contract as specified in the Contract Documents. All the above Contracts will contain a cross-fall breach clause specifying that breach of one Contract will constitute breach of the other Contracts which will confer a right on the Employer to terminate the other Contracts also at the risk and the cost of the Contractor. The foreign bidder, however, has the option, to be exercised as a part of its bid proposal, to propose an Assignee in its bid to execute the Second Contract and/or the Third Contract. For the scope of work envisaged by the foreign bidder, in its bid, to be executed by Assignee, the Assignee should have relevant/required capacity and experience of executing similar job. The bidder shall substantiate with relevant/required documents in the bid to establish capacity and experience of the Assignee. If the foreign bidder has proposed an Assignee in its bid to execute the Second Contract and/or the Third Contract and has also furnished written unequivocal consent of the proposed Assignee to work as an independent Contractor on the terms and conditions offered by the bidder and if the Employer is satisfied with the capacity and experience of the Assignee proposed in the bid, the Employer will enter into the 'Second Contract' and/or the 'Third Contract' with the Assignee. However, if the Employer in its judgment does not find acceptance of the Assignee proposed in the bid as its Contractor, then on the request of the Employer, the bidder shall have option to propose an alternate Assignee on the same terms and conditions and cost as offered in its bid. It is expressly understood and agreed that in case the option is not exercised by the Bidder or if the Assignee fails to enter into Contract(s) with the Employer or if the Employer in its judgment does not find acceptance of Assignee as its Contractor, then the foreign bidder shall be obliged to enter into and execute all the three Contracts with the Employer covering the entire scope of work envisaged in the bidding documents on the same terms and conditions and cost as offered in its bid.	
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)
31.0 32.0 32.1 33.0 34.0 34.1 34.2 34.3 34.4	However, for the above purpose, only one Assignee shall be permitted for both Second Contract and/or the Third Contract. Employer's Right to Accept Any Bid and to Reject Any or All Bids Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for Employer's action. Notification of Award Prior to the expiration of the period of bid validity, the Employer will notify the successful Bidder in writing by registered letter or by email to be confirmed in writing by registered letter, that its bid has been accepted. The notification of award will constitute the formation of the contract. Signing the Contract Agreement On receipt of Employer's notification that its bid has been accepted, Bidder/ Assignee of foreign bidder (if applicable) shall prepare and finalize the Contract Documents for signing of the formal Contract Agreement and shall enter into the Contract Agreement with the Employer, as per Proforma enclosed with the Bidding Documents, on non-judicial stamp paper of appropriate value within 28 days from the date of the Notification of Award. Performance Security Within twenty-eight (28) days after receipt of the Notification of Award, the successful Bidder shall furnish performance securities for ten (10%) of Contract Price for all the contracts and in the form provided in the section "Forms and Procedures" of the bidding documents. In case Deed(s) of Joint Undertaking by the Contractor along with his associate(s)/collaborator(s)/Promoter(s) form part of the Contract, then, unconditional Bank Guarantee(s) from such associate(s) / collaborator(s)/ Promoter(s) towards faithful performance of the Deed(s) of Joint Undertaking for amount(s) specified in the Bid Data Sheets shall be furnished within twenty eight (28) days after Notification of Award. These Bank Guarantees shall be furnished in the form provided in the section "Forms and Procedures" of the bidding documents and shall be valid till such period as specified in the corresponding format for Deed of Joint Undertaking. In case of a successful foreign bidder, if the Employer accepts to enter into the Second Contract and / or Third Contract with the Assignee, pursuant to ITB Sub-Clause 30.4 above, then, within twenty eight (28) days of Notification of Award, the Assignee shall furnish additional performance security(ies) for ten (10%) of the value of the Contract(s) entered into with the Assignee and in the form provided in the Section "Forms and Procedures" of the bidding documents. Performance Security for Phased Manufacturing Programme (PMP)
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)
34.5	Within twenty-eight (28) days after receipt of the Notification of Award, the successful Bidder shall furnish performance securities for PMP, in favour of Employer for an amount as stipulated in SCC and in the form provided in the section "Forms and Procedures" of the bidding documents. The Bank Guarantees submitted towards Performance Security shall be essentially from any of the Banks listed in Annexure-I to SCC. The Bank Guarantee submitted from within India towards Performance Security shall be issued on Non-Judicial Stamp Paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG is executed whichever is higher. In case of guarantees issued by branches outside India for foreign banks, the bank guarantees shall be routed through the correspondent Bank in India for due verification of signatures of the executants and lodgement of claim. The BG issued by a Bank outside India also needs to bear Stamp Duty of appropriate value applicable to the place in Employer where BG is to be submitted, the BG will be adjudicated from Collector of Stamps, within 3 months of arrival of BG in India and the expenses incurred in this regard shall be recovered from the Contractor.
34.6	While issuing the physical BG, the Bidder's Bank shall also send electronic message to Employer's Beneficiary Bank whose details are provided in Bid Data Sheets (BDS) through secure SFMS (in case of BGs issued from within India) or SWIFT (in case of BGs issued from outside India).
34.7	Annulment of award Failure of the successful Bidder to comply with the requirements of ITB Clause 33 or Clause 34.0 shall constitute sufficient grounds for the annulment of the award and forfeiture of his bid security.
35.0	Ineligibility for participation in re-tender/ future tenders i) Notwithstanding the provisions specified in ITB Sub-Clause 12.8 and ITB Clause 34.5, if a bidder after having been issued the Notification of Award, either does not sign the Contract Agreement pursuant to ITB Clause 33 or does not submit an acceptable Performance Security pursuant to ITB Clause 34.1 to 34.4, and which results in retendering of the package, then such bidder/contractor shall be treated ineligible for participation in re-tendering of this particular package. Further, such bidder/contractor shall also be dealt as per the provisions of policy for Debarment from Business Dealings. ii) If a bidder after opening of tenders where EMD is 'NIL/Not applicable' or exempted for bidders as per policy guidelines, withdraws its offer within the validity period of the offer, then such bidder shall be treated as ineligible for participation in the future tenders for a
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36.0	period up to Two Years from the date of withdrawal of the bid, and also in re-tendering of this particular package. iii) If a bidder after having been issued the Notification of Award/ Purchase Order of a package where EMD is 'NIL/Not applicable' or exempted for bidder as per policy guidelines, either does not sign the Contract Agreement pursuant to ITB Clause titled 'Signing the Contract Agreement' or does not submit an acceptable Performance Security pursuant to ITB Clause titled 'Performance Security', and which result in retendering of the package, then such bidder/contractor shall be treated ineligible for participation in re-tendering of this particular package. Further, such bidder/contractor shall also be dealt as per the provisions of the contract and policy for Debarment from Business Dealings. Time Schedule (Programme of performance) The plant and equipment covered by this bidding document are required to be shipped and installed, and the facilities are to be completed within the period named in the Bid Data Sheets after the effective date specified in the Contract Agreement. Bidders are required to base their prices on the time schedule given in relevant appendix to the form of Contract Agreement (Time Schedule) or, where no time schedule is given, on the completion date(s) given in the Bid Data Sheets. No credit will be given for earlier completion.
36.1	Notwithstanding above to the extent applicable, Employer has specified in the Bid Data Sheets the schedule for attainment of 'Completion of Trial Operation' & 'Completion of Facilities' for Unit-1 and 'Completion of Trial Operation' & 'Completion of Facilities' Unit-2 and common facilities. Employer has also specified the date of attainment of major project milestones in the Bid Data Sheets. Based on the aforesaid completion schedule, Bidder shall furnish along with their Envelope-II (Techno-Commercial) bid, a detailed work schedule in line with major project milestones specified in the Bid Data Sheets as Attachment-14. The work Schedule shall include at least following activities for each system / major equipment showing their inter-relationships between engineering, supply and site execution: i. Basic Engineering ii. Ordering on sub-vendor (wherever applicable) iii. Detailed Engineering iv. Raw material procurement, fabrication/ manufacturing v. Testing, Inspection and commencement of sequential dispatch vi. Transportation and receipt at site. vii. Completion of dispatch viii. Release of civil foundations/ fronts for equipment erection ix. Completion / achievement of milestones considered for progressive payment (as per bid documents) x. Trestle / Gallery readiness xi. Progressive readiness of various buildings xii. Start of erection (area-wise) xiii. Intermediate milestones and completion of erection xiv. Commissioning of the system
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)
37.0 37.1 37.2 38.0 39.0	Corrupt or Fraudulent Practices Employer requires that Bidders, Contractors and Suppliers observe the highest standard of ethics during the procurement and execution of the contracts. In pursuance of this policy, Employer: (a) defines, for the purposes of this provision, the terms set forth below as follows : (i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and (ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition; (b) will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question; (c) will declare a firm ineligible, for a period of time as specified in the Debarment Policy, to be awarded a contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for or in executing a contract of the Employer. Furthermore, Bidders shall be aware of the provision stated in Sub-Clause 42.2 of the General Conditions of Contract. Fraud Prevention Policy The Bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to the Fraud Prevention Policy of Employer attached at Annexure-VII to Special Conditions of Contract (SCC) of the bidding documents and shall immediately apprise Employer about any fraud or suspected fraud as soon as it comes to their notice. A certificate to this effect shall be furnished by the bidder along with his bid, in relevant attachment to Bid Form as per format enclosed with the Bidding Document. If in terms of above policy, it is established that the bidder/his representatives have committed any fraud while competing for this contract then the bid security of the bidder shall be forfeited. Bidders shall certify their compliance on “Fraud Prevention Policy” of Employer by submitting a certificate of ‘No Deviation’ [Attachment-6: NO DEVIATION CERTIFICATE] Phased Manufacturing Programme
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40.0	Successful Bidders are required to establish manufacturing base in India for manufacturing of Super Critical Steam Generator Sets and Super Critical Steam Turbine Generator Sets as per Major Milestones Schedule for Phased Manufacturing Programme (PMP) indicated in the Bid Data Sheet. Further Bidders are required to furnish firm commitment for establishment of manufacturing base in India & Technology Transfer for manufacturing of Super Critical Steam Generator Sets and Super Critical Steam Turbine Generator Sets from the technology provider(s) to the Indian manufacturing company as per 8.1.1 (p) of ITB. Pre-Bid Conference The Bidder or his authorised representative (s) is invited to attend the pre-bid conference which will take place as per details stipulated in Bid Data Sheets. Bidders are advised to visit and examine the site during the pre-bid conference as per clause 5.2 of ITB, regardless of their visit to site earlier. The purpose of the conference will be to clarify any issue regarding the Bidding Documents subsequent to Site visit by Bidder. The Bidder is requested to submit questions in writing or by email before and/or after the pre-bid conference to reach the Employer at the address indicated in BDS, not later than the date as specified in IFB. Employer's responses to the queries raised by the bidders shall be in the form of Clarification to the bidding documents, which will be uploaded / hosted on the e-tender portal. Any queries submitted by Bidder after the specified last date shall not be responded to by Employer and the Bidder will be required to submit their bid based on the Bidding documents read in conjunction with Amendments/Clarifications/Errata thereof. Any modifications of the Bidding Documents which may become necessary as a result of the pre-bid conference shall be made by the Employer exclusively through an amendment to the bidding documents. Non-attendance at the pre-bid conference will not be a case for disqualification of a bidder. However, Bidder is expected to visit and examine the site to acquaint itself with the ground situations and attend the pre-bid conference subsequently.	
41.0	Integrity Pact Bidders are required to unconditionally accept all the conditions of the "Integrity Pact (IP)" as per Attachment-20 to the Bidding Documents which has been pre-signed by the Employer. Bidders shall certify their compliance on "Integrity Pact " by submitting a certificate of 'No Deviation' [Attachment-6: NO DEVIATION CERTIFICATE] By submission of Attachment-6: NO DEVIATION CERTIFICATE, Bidder confirms to have read, understood and unconditionally accept & commit to all the contents, terms, conditions and undertakings mentioned in the Integrity Pact which has been pre-signed by the Employer and enclosed with the Bidding Documents. Where the Joint Venture(s) /	
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Clause No.	INSTRUCTIONS TO BIDDERS (ITB)	
	Consortium are permitted to participate in the bid pursuant to ITB Clause 8.1.2(a), Submission of above attachment-6 by bidder shall mean that all the JV Partner(s)/ Consortium members have read, understood and unconditionally accept & commit to all the contents, terms, conditions and undertakings mentioned in the Integrity Pact which has been pre-signed by the Employer and enclosed with the Bidding Documents. By submission of Attachment-6: NO DEVIATION CERTIFICATE, Integrity Pact shall be considered signed by the Bidder / JV Partner(s)/ Consortium members and the same shall come into force from the date of submission of bid. It may also be noted that subsequent to Employer’s evaluation of Bids, resulting into award of Contract to a particular Bidder, the Integrity Pact so submitted shall form an integral part of the Contract.	
42.0	Deleted	
43.0	Deleted	
44.0	Debarment Policy The Employer has in place a Debarment Policy as enclosed at Annexure-II to Special Conditions of Contract (SCC) of the Bidding Documents. Business dealings may be withheld or banned with the Bidder/Contractor on account of any of the grounds and following the procedures as detailed in the said Debarment Policy. Compliance to the “Debarment Policy” as indicated in the Special Conditions of Contract (Section-V) has to be confirmed by submitting a certificate of ‘No Deviation’ [Attachment-6: NO DEVIATION CERTIFICATE] Submission of Attachment-6: NO DEVIATION CERTIFICATE shall be considered as bidder’s confirmation to the following conditions: (1) bidder has read the contents of the Debarment Policy of DVC attached with this Bidding Document and agrees to abide by this policy. Further, in terms of requirement under Banning Practices we hereby declare that in case where the business firm happens to have been banned/suspended by ‘Any establishment of DVC’/’Ministry of Power- Govt. of India’/’Department of Expenditure (DoE), Ministry of Finance (MoF)- as displayed on Central Procurement Portal(CPPP)’ and the ban/ suspension is still in force on the date of bid opening of techno-commercial bid or on the date of issuance of LOA/PO/Work Order /LOA-cum-Work Order, the offer of the business firm /authorized agent/distributor/dealer/affiliates shall not be considered for all establishments of DVC. (2) Bidder further confirms as under: that if at any point subsequent to award of Contract, the declarations given above are found to be incorrect, DVC shall have the full right to terminate the Contract and take	
KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB	EPC PACKAGE SECTION – II (ITB)	Page 40 of 43

Clause No.	INSTRUCTIONS TO BIDDERS (ITB)
45.0 46.0 46.1 46.2 46.3	any action as per applicable laws for breach of contract including forfeiture of Bid Security/Performance Bank Guarantee. Royalty The Bid Price shall be inclusive of any Royalties or Seigniorage Fee or Cess or other charges payable on the quarried or mined metal, minerals, or minor minerals, as the case may be, at the rate(s) prevailing as on seven (7) days prior to the date of Techno-commercial bid opening. “Restrictions on procurement from a Bidder of a country which shares a land border with India” Any Bidder (including its Collaborator/Associate/DJU Partner/JV partner/Consortium Member/Assignee, wherever applicable) from a country which shares a land border with India will be eligible to bid in this tender only if bidder is registered with the Competent Authority as mentioned in Special Conditions of Contract (SCC). Further, any bidder (including bidder from India) having specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India, will be eligible to bid only if the bidder is registered with the same competent authority as mentioned in Special Conditions of Contract (SCC). (Definition/Requirement of ToT shall be as specified in DOE OM Ref. No. F.7/10/2021-PPD(1) dated 23.02.2023) Such registration should be valid for the entire period of bid validity or any extension thereof. However, in case the validity period of registration is less than bid validity period, the Bidder shall be required to submit the extension of the validity period of registration before the opening of price bids, failing which the bid shall be rejected. Further the successful bidder shall not be allowed to sub-contract services/works to any “Sub-contractor” from a country which shares a land border with India unless such Sub-contractor is registered with the competent Authority as mentioned in SCC. However, the said requirement of registration will not apply to bidders/sub- contractors from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects. Bidders may apprise themselves of the updated lists of such countries available in the website of the Ministry of External Affairs. “Bidder” (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency, branch or office controlled by such person, participating in a procurement process. “Sub-contractor” (including the term 'Sub-vendor'/Sub-supplier' in certain contexts) means any person or firm or company, every artificial juridical person not falling in any of the
KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB	EPC PACKAGE SECTION – II (ITB) Page 41 of 43

Clause No.	INSTRUCTIONS TO BIDDERS (ITB)		
46.4	descriptions of Sub-contractors stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process. “Bidders from a country which shares a land border with India” / “Subcontractor from a country which shares a land border with India” / “Entity from a country which shares a land border with India” mentioned in para 46.1 above means; a) An entity incorporated, established or registered in such a country; or b) A subsidiary of an entity incorporated, established or registered in such a country; or c) An entity substantially controlled through entities incorporated, established or registered in such a country; or d) An entity whose beneficial owner is situated in such a country; or e) An Indian (or other) agent of such an entity; or f) A natural person who is a citizen of such a country; or g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.		
46.5	The beneficial owner for the purpose of clause “46.4” above will be as under; a) In case of company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means. Explanation i. “Controlling ownership interest” means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company; ii. “Control” shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholdings or management rights or shareholders agreements or voting agreements; b) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more judicial person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership; c) In case of an unincorporated associations or body of individuals, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals; d) Where no natural person is identified under (a) or (b) or (c) above, the beneficial owner is the relevant natural person who holds the position of senior managing officials;		
KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – II (ITB)	Page 42 of 43

Clause No.	INSTRUCTIONS TO BIDDERS (ITB)		
46.6	e) In case of a trust, the identifications of beneficial owner(s) shall include identification of the author of trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership. An Agent for the purpose of clause “46.4” is a person employed to do any act for another, or to represent another in dealings with third person. [Note: i. A person who procures and supplies finished goods from an entity from a country which shares a land border with India will, regardless of the nature of his legal or commercial relationship with the producer of the goods, be deemed to be an Agent. ii. However, a bidder who only procures raw material, components etc. from an entity from a country which shares a land border with India and then manufactures or converts them into other goods will not be treated as an Agent.]		
KODERMA THERMAL POWER STATION (2X800MW) BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – II (ITB)	Page 43 of 43

SECTION – III
BID DATA SHEETS

BDS Item No.	ITB Clause ref., if any	Data													
		SECTION - III BID DATA SHEETS (BDS) EPC PACKAGE FOR KODERMA THERMAL POWER STATION PHASE-II (2X800 MW) The following bid specific data for the Plant & Equipment to be procured, shall amend and/or supplement the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in the ITB. Bid Document No.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB A. INTRODUCTION <table><tr><td>1.0</td><td>Instructions Related to E –Tendering</td><td>Bidders are required to go through the Guidelines provided at following e-tendering site: https://etenders.gov.in/eprocure/app</td></tr><tr><td>1.1</td><td>ITB 1.1.1</td><td>Name of the Package: EPC Package for KODERMA THERMAL POWER STATION PHASE-II (2X800 MW)</td></tr><tr><td>2.0</td><td>ITB 5.1</td><td> B. THE BIDDING DOCUMENTS "Employer" or "DVC" shall mean Damodar Valley Corporation, Established by the ACT XIV of 1948 having its registered office at DVC Towers, VIP Road, Kolkata- 700054, India and shall include their legal representatives, successors, administrators, executors and permitted assigns. 'NTPC' shall mean NTPC Limited, a Company incorporated under the Companies Act, 1956, having its registered office at Core-7, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi- 110 003 and shall include their legal representatives, successors and permitted assigns which shall provide Consultancy Services to DVC for KODERMA THERMAL POWER STATION PHASE-II (2x800MW). <table><tr><td>Address of Employer:</td><td>Damodar Valley Corporation, (Established by the ACT XIV of 1948) DVC Towers, VIP Road, Kolkata- 700054</td></tr><tr><td>Address for clarification/ pre-bid conference/ correspondence/ bid opening:</td><td>General Manager, C&M Department, 3rd Floor, DVC Towers, VIP Road, Kolkata, West Bengal, India, PIN – 700054 Mobile No. +91 8335037065 Email ID: amitava.maity@dvc.gov.in</td></tr></table></td></tr></table>	1.0	Instructions Related to E –Tendering	Bidders are required to go through the Guidelines provided at following e-tendering site: https://etenders.gov.in/eprocure/app	1.1	ITB 1.1.1	Name of the Package: EPC Package for KODERMA THERMAL POWER STATION PHASE-II (2X800 MW)	2.0	ITB 5.1	B. THE BIDDING DOCUMENTS "Employer" or "DVC" shall mean Damodar Valley Corporation, Established by the ACT XIV of 1948 having its registered office at DVC Towers, VIP Road, Kolkata- 700054, India and shall include their legal representatives, successors, administrators, executors and permitted assigns. 'NTPC' shall mean NTPC Limited, a Company incorporated under the Companies Act, 1956, having its registered office at Core-7, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi- 110 003 and shall include their legal representatives, successors and permitted assigns which shall provide Consultancy Services to DVC for KODERMA THERMAL POWER STATION PHASE-II (2x800MW). <table><tr><td>Address of Employer:</td><td>Damodar Valley Corporation, (Established by the ACT XIV of 1948) DVC Towers, VIP Road, Kolkata- 700054</td></tr><tr><td>Address for clarification/ pre-bid conference/ correspondence/ bid opening:</td><td>General Manager, C&M Department, 3rd Floor, DVC Towers, VIP Road, Kolkata, West Bengal, India, PIN – 700054 Mobile No. +91 8335037065 Email ID: amitava.maity@dvc.gov.in</td></tr></table>	Address of Employer:	Damodar Valley Corporation, (Established by the ACT XIV of 1948) DVC Towers, VIP Road, Kolkata- 700054	Address for clarification/ pre-bid conference/ correspondence/ bid opening:	General Manager, C&M Department, 3rd Floor, DVC Towers, VIP Road, Kolkata, West Bengal, India, PIN – 700054 Mobile No. +91 8335037065 Email ID: amitava.maity@dvc.gov.in
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KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS) PAGE 1 OF 18													

BDS Item No.	ITB Clause ref., if any	Data
3.0	ITB 5.2	Pre-Bid Conference The pre-bid conference shall be arranged on date specified in IFB. C. PREPARATION OF BIDS
4.0	8.1.2 (a)	Qualifying Requirements are enclosed as Appendix-I to BDS.
4.1		Wherever the bidder is seeking qualification on the strength of his Associate(s)/Collaborator(s), then in addition to filling his own details as per Attachment-3 of Section-VII, Part-1 of 3, bidder shall ensure that details as per Attachments 3(B) to 3(H) and 3(J) of Section-VII, Part 1 of 3 is filled-in for such Associate(s)/Collaborator(s) separately alongwith supporting documents to enable Employer to carry out Capability and Capacity assessment (including Financial Capability) as stated in ITB Clause 8.1.2(a), if required by the Employer.
4.2.1		The reference plants whose details have been declared as per the specified format in the relevant attachment [i.e. Attachment No.-3A] shall only be considered to ascertain the bidder's compliance to the specified Qualifying Requirement (QR). Bidders wishing to provide additional reference plants are required to declare the same in similar format which shall be additionally attached. However, bidders are not permitted to quote more than three times of the reference works/plants wherever specified in the Qualifying Requirements for this purpose. Bidders are required to furnish the details of past experience based on which selection is to be made as per format enclosed in the bidding documents and enclose relevant documents like copies of authentic work order, completion certificate, agreements etc. supporting the details/data provided in the format. No claims without supporting documents shall be accepted in this regard. However, if any of the reference work pertains to the Contract(s)/Works executed by Bidder for NTPC/Employer in the past then in respect of such Contract(s)/Works Bidder shall not be required to enclose Client Certificate(s) along with its bid. The Employer at its discretion may seek any clarification and/or documentary evidence only for the reference plants as mentioned above. However, no change or substitution of the reference plants as new/additional plant for conforming to the specified Qualifying Requirement shall be sought, offered or permitted.
4.2.2		After issuance of IFB/ NIT, Employer shall issue a communication separately to prospective bidders, who have been considered qualified meeting similar Technical QR in another tender in the past, stating that while submitting their bid, they are not required to submit the details/ documents pertaining to reference plants/ works/ past experiences in support of meeting Technical QR to the extent mentioned in the communication. In case the bidder who has been issued such communication from the Employer, intends to seek qualification under the same clause/ route (along with the same Associate/ Collaborator/ JV partner/ Consortium partner, if applicable) as mentioned in such communication, then such bidder shall not be required to submit details/ documents pertaining to
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS) PAGE 2 OF 18

BDS Item No.	ITB Clause ref., if any	Data
4.2.3		reference plants / works / past experiences in support of meeting Technical QR while submitting their bid. Such bidder shall be required to declare in Appendix-A to Attachment-3A (Attachment seeking Bidder's Technical Qualification Detail) that they have received communication from the Employer and are not required to submit details/ documents pertaining to reference plants/ works/ past experiences for meeting Technical QR. However, the bidder shall be required to submit any other details pertaining to Technical QR such as applicable Deed of Joint Undertakings/ Joint Venture Agreements/ Technology Transfer Agreements etc. (as applicable). In case such bidder, who has been issued above communication from Employer, wishes to seek qualification under a different clause/ route of QR and/ or with the support of a different Associate/ Collaborator/ JV partner/ consortium partner, then the bidder shall be required to furnish the requisite details pertaining to reference plants/ works along with supporting documents as sought in the bidding documents. In such a case, communication issued by the Employer as mentioned above shall not be considered applicable.
4.2.4		All other bidders, who are required to submit the details of the past experiences, shall submit all the documents, in support of Technical Qualification Requirements (such as copy of Purchase Orders/ Work Orders/ Contract Agreements/ Client Certificates etc.), duly certified and verified for authenticity from Independent Statutory Auditor of their Company or specified Third-Party Inspection Agency (TPIA). Further, wherever information can be drawn from books of accounts, records and other relevant documents, Bidders can also submit a certificate issued by their Independent Statutory Auditor certifying the data required for meeting the Technical Qualification Requirements. Such bidder shall be required to submit duly certified and verified documents from their Statutory Auditors or specified TPIA in support of meeting Technical QR along with a certificate regarding verification of authenticity of documents as per the format placed at Appendix-B to Attachment-3A (Undertaking from Statutory Auditor) and/ or Appendix-C to Attachment-3A (Undertaking from TPIA) of Book 1 of 3, Sec-VII. All the documents submitted by the bidder in support of meeting Technical QR shall be digitally signed by the Statutory Auditor and/ or specified TPIA.
4.2.5		In case documents are certified & verified for authenticity through TPIA, the verification and certification of authenticity of documents is acceptable from any of the following TPIAs: 1) Société Générale de Surveillance / SGS India Pvt. Ltd.(SGS) 2) Gulf Lloyds Industrial Services (India) Pvt. Ltd (GLISPL) 3) International Certification Services (ICS) 4) TÜV Rheinland (India) Pvt. Ltd. 5) TÜV SÜD South Asia Pvt. Ltd. 6) TÜV India Pvt. Ltd. (TÜV Nord Group) 7) Intertek India Pvt. Ltd.
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS) PAGE 3 OF 18

BDS Item No.	ITB Clause ref., if any	Data		
		8) Moody International (India) Pvt. Ltd. 9) RINA India Pvt. Ltd. 10) Competent Inspectorate and Consultants LLP The following website may be referred for contact details of above ten (10) TPIAs: http://nabcb.gci.org.in/accreditation/reg_bod_inspection_bodies.php Any document pertaining to reference works/ plants in support of Technical QR, which is not certified by specified TPIA or Statutory Auditor of the bidder, as per the format enclosed with the bidding documents, shall not be considered verified/ certified for the purpose of evaluation, and the bid shall be liable for rejection.		
4.2.6		The Bidder shall be responsible to get their documents/ credentials in support of Qualifying Requirements verified & certified by their Statutory Auditor(s) and/ or specified TPIAs. All the costs pertaining to third party verification and certification (including those by statutory auditors) shall be borne by the Bidder. Employer shall have no liability (financial or otherwise) towards the same and shall not be liable for any claim/ dispute between the bidder and TPIA and/ or Statutory Auditor.		
5.0	ITB 12	BID SECURITY		
5.1	ITB 12.1	Amount of Bid Security: Bid Security shall be submitted in an amount of INR 90,76,54,760/- (Indian Rupees Ninety Crores Seventy-Six Lacs Fifty-Four Thousand Seven Hundred Sixty Only) or USD 10,826,034 (Ten Million Eight Hundred Twenty-Six Thousand and Thirty-Four US Dollars) .		
5.2	ITB 12.2	List of the Banks are specified at Annexure-I to BDS.		
6.0	ITB 5.1, 15.2, 18.0	D. SUBMISSION OF BIDS Request for issuance of Bidding Documents, any clarification sought on the Bidding Documents, the Bidder's bid, any modification or withdrawal of bids shall be addressed to the Employer as per address given at BDS Item No. 6.1.		
6.1	ITB 16.1, 16.3	Address for submissions/communication: General Manager, C&M Department, 3rd Floor, DVC Towers, VIP Road, Kolkata, West Bengal, India, PIN – 700054 Mobile No. +91 8335037065 Email ID: amitava.maity@dvc.gov.in		
6.2	ITB 16.1	Deadline for Bid Submission-as indicated at e-Tender Portal .		
7.0	ITB 19.1	E. BID OPENING AND EVALUATION <table><tr><td>Location of Bid Opening</td><td>As stated in IFB / subsequent communication, if any.</td></tr></table>	Location of Bid Opening	As stated in IFB / subsequent communication, if any.
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KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS) PAGE 4 OF 18		

BDS Item No.	ITB Clause ref., if any	Data																																		
8.0	ITB 26.3 & ITB 27.3	Time for Techno-Commercial Bid Opening	Please refer e-Tender Portal.																																	
		Date for Techno-Commercial Bid Opening	Shall be intimated separately by the Employer.																																	
		Currency chosen for : Indian Rupees purpose of evaluation																																		
9.0	ITB 36.1	Type of Transaction & : source of Exchange Rate	Bill Selling Exchange Rate established by State Bank of India																																	
		Date of Exchange Rate	Date of opening of Envelope-I (Techno-commercial) Bid																																	
		Time for Completion of Facilities from the date of Notification of Award shall be 48 & 52 months for Unit 1 & Unit 2 respectively.																																		
9.1		<table><tr><th>S. No.</th><th>Activity/ Description of Milestones</th><th>Duration in months from NOA</th></tr><tr><td>1</td><td>Completion of dispatches (excl Mandatory Spares) for Unit#1 & common Facilities</td><td>38</td></tr><tr><td>2</td><td>Completion of dispatches (excl Mandatory Spares) for Unit#2</td><td>40</td></tr><tr><td>3</td><td>Synchronization of Unit #1</td><td>44</td></tr><tr><td>4</td><td>Synchronization of Unit #2</td><td>48</td></tr><tr><td>5</td><td>Full Load of Unit #1</td><td>45</td></tr><tr><td>6</td><td>Full Load of Unit #2</td><td>49</td></tr><tr><td>7</td><td>Completion of Trial Operation & PG Test for U#1</td><td>46</td></tr><tr><td>8</td><td>Completion of Trial Operation & PG Test for U#2</td><td>50</td></tr><tr><td>9</td><td>Completion of Facilities Unit # 1</td><td>48</td></tr><tr><td>10</td><td>Completion of Facilities Unit # 2</td><td>52</td></tr></table>		S. No.	Activity/ Description of Milestones	Duration in months from NOA	1	Completion of dispatches (excl Mandatory Spares) for Unit#1 & common Facilities	38	2	Completion of dispatches (excl Mandatory Spares) for Unit#2	40	3	Synchronization of Unit #1	44	4	Synchronization of Unit #2	48	5	Full Load of Unit #1	45	6	Full Load of Unit #2	49	7	Completion of Trial Operation & PG Test for U#1	46	8	Completion of Trial Operation & PG Test for U#2	50	9	Completion of Facilities Unit # 1	48	10	Completion of Facilities Unit # 2	52
S. No.	Activity/ Description of Milestones	Duration in months from NOA																																		
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7	Completion of Trial Operation & PG Test for U#1	46																																		
8	Completion of Trial Operation & PG Test for U#2	50																																		
9	Completion of Facilities Unit # 1	48																																		
10	Completion of Facilities Unit # 2	52																																		
The phase gap between various activities of 2nd Unit shall be 4 (Four) Months except for engineering activities which shall remain same for both units.																																				
The suggestive work schedule is enclosed at Appendix-II to BDS .																																				
As Infrastructure works like construction power, lighting, water supply, construction offices, Construction store, Solar PV plant on Roof tops of Buildings, Portable DM Plant for Hydro test etc (as specified in the scope) and SG,TG, ESP, AHP & Chimney civil works etc are included in the scope of contract, it is necessary that the prospective bidders will be required to tie up with sub agency/sources during bidding stage, so that the award for such work is finalized/ placed by the successful bidder in the 1st month on award of EPC Package and mobilization of these works take place in 2 nd month itself.																																				
Further it is necessary that the successful bidder shall mobilize sufficient number & adequate capacity DG sets at his own cost for providing																																				
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS)																																		
		PAGE 5 OF 18																																		

BDS Item No.	ITB Clause ref., if any	Data												
9.2		necessary power requirement till readiness of permanent construction power system, which is in the scope of the bidder.												
9.3		The contractor shall prepare L2 schedule for the sequence of work of manufacture, supply, construction and erection to meet the above stated dates of successful completion of facilities and shall ensure all work, manufacture, shop testing, inspection and shipment of the equipment in accordance with the required construction/erection sequence and furnish the same along with the Envelope-I (Techno-commercial) Bid. Detailed (L3) Schedule: The Contractor shall submit detailed L3 schedule to the Project Manager within 45 days from NOA for his review and approval of the same wherein the activities viz supply of Plant & Equipment and services to be provided under the Contract(s) shall be further bifurcated month wise in conformity with month-wise schedule of payment submitted along with their Price Bid for the purpose of identification of Schedule date mentioned in Appendix-2 (Price Adjustment). The detailed L3 Schedule is to be submitted in hard copy as well as soft copy to EIC/ Employer Project Manager for approval. F. AWARD OF CONTRACT Major Milestone Schedule for Phased Manufacturing Programme (PMP) Various Major Milestones for the Phased Manufacturing Programme (PMP) and their Completion Schedule for Steam Generator & Auxiliaries and Steam Turbine Generator & Auxiliaries are as under: (A) For Steam Generator & Auxiliaries <table><tr><th>Sl. No.</th><th>Equipment</th><th>Indicative Facilities Requirement</th><th>To be established latest by (Month from Date of Award)</th></tr><tr><td>1.</td><td>Pressure Parts (straight water wall & spiral water wall)</td><td>*Straight tube butt welding facility *Automatic welding facility for panel processing *NDT facilities *Hydro testing *Continuous heat treatment furnace *Gang/panel bending facility (for straight water wall & spiral water wall tube panels)</td><td>36</td></tr><tr><td>2.</td><td>Pressure Parts (economiser, superheater and reheater coils and panels)</td><td>*System bend facility *Welding facility for coils *NDT facilities *Hydro testing *Continuous heat treatment furnace *Jigs & fixtures for assembly and</td><td>42</td></tr></table>	Sl. No.	Equipment	Indicative Facilities Requirement	To be established latest by (Month from Date of Award)	1.	Pressure Parts (straight water wall & spiral water wall)	*Straight tube butt welding facility *Automatic welding facility for panel processing *NDT facilities *Hydro testing *Continuous heat treatment furnace *Gang/panel bending facility (for straight water wall & spiral water wall tube panels)	36	2.	Pressure Parts (economiser, superheater and reheater coils and panels)	*System bend facility *Welding facility for coils *NDT facilities *Hydro testing *Continuous heat treatment furnace *Jigs & fixtures for assembly and	42
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KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB	EPC PACKAGE SECTION – III (BDS)	PAGE 6 OF 18

BDS Item No.	ITB Clause ref., if any	Data
		layout checking facility *Portable equipment for material/grade identification
	3. Pressure Parts (headers)	*Welding 42 *Machining & drilling *Heat treatment *Hydraulic testing *NDT facilities *Pressing facility for end caps & tees *Material identification facility *Facility for high alloy (P5 and above) continuous welding
	4. Separator (shell and dished ends)	*Rolling facility/pressing facility 48 *Machining & drilling *Welding *Heat treatment *Hydraulic testing *NDT facilities *Pressing arrangements for dished ends
	(B)	For Steam Turbine Generator & Auxiliaries
	Sl.No. Equipment	Indicative Facilities Requirement To be established latest by (Month from Date of Award)
	1. Turbine Casings and Valves machining	* LP outer Casing fabrication 36 * HP/IP/LP Casing Machining & blading * Heat Treatment/Stress Relieving * Turbine valve machining & assembly testing
	2. Turbine Rotor machining	* Rotor machining including grooves & Fir Tree machining 42 * Rotor assembly and balancing * Turbine assembly
	3. Rotating blades machining	* Rotating Blade machining & finishing 52
	4. Generator Core and stator manufacturing	* Core stamping, fabrication facility Heat Treatment/Stress Relieving 40 * Generator Stator Fabrication and core building facility * Stator bar manufacturing and heavy machining facility for fabricated Items.
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS)
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BDS Item No.	ITB Clause ref., if any	Data
10.1	5. Generator Rotor	* Rotor machining including slotting * Rotor assembly and balancing * Exciter manufacturing & testing * Rotor winding facility 42
	6. Generator Assembly*	Generator assembly and testing 48
11.0	ITB 40.0	For the Contractor, having already undertaken commitments for PMP in the Bulk order for supercritical units (or any other order under earlier projects of Central/State Sector Power Generating Company) Such Contractor shall be required to undertake manufacturing activities as indicated in BDS Item No. 10.0 above in the indigenous manufacturing facilities set up under the PMP for the supplies made to this project after completion of time period as specified for PMP from the date of award of such first order. The same shall be demonstrated to the entire satisfaction of the owner. Address for pre-bid conference: DVC Towers, Opp. V.I.P Road, Ultadanga, Kolkata-700054 The pre-bid conference shall be held at Employer's address mentioned above on the date(s) specified in e-Tender Portal.
12.0	General	The instruments such as Letter of Undertakings, Joint Deed of undertakings etc which are presently specified to be furnished on non-judicial stamp paper of appropriate/requisite value, shall be stamped as per Indian Stamp Act.
13.0	General	Throughout the Bidding Documents (including amendment) Ex-works (India) shall mean EXW (India).
14.0	General	Bidder to quote take out price for "Insurance to be taken by the Contractor" in Schedule 9. While Quoting Take Out Price Bidder should consider all the insurance prices covered in Schedule 3 and 4. The option of taking the insurance by Employer, shall be exercised at the time of award of Contract. Further all the necessary details for insurance shall be furnished by the bidder to Employer whenever required.
15.0	General	Unless repugnant to the context or meaning thereof, throughout these bidding documents all references to NTPC/Employer shall mean references to DVC except for reference work pertaining to the Contract(s)/Works executed by Bidder for NTPC/Employer as per clause 4.2.1 above.
16.0	ANNEXURES ENCLOSED WITH BDS Appendix-I- Qualifying Requirements	
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS)
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BDS Item No.	ITB Clause ref., if any	Data
		Appendix-II- Suggestive Milestone Schedule Annexure-I: List of Banks for Bank Guarantee Annexure-II: Not used Annexure-III: Not used Annexure-IV: Preference to Make In India and granting of purchase preference to local suppliers
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB	EPC PACKAGE SECTION – III (BDS)	PAGE 9 OF 18

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		Suggestive List of Major T&Ps a. to be deployed at site in SG & Auxiliaries area <table> <tr> <th>S.No.</th><th>Description of T&P</th><th>Quantity (nos.)</th></tr> <tr> <td>1a.</td><td>600/750 MT Crane for lifting of structures, Ceiling girders etc. as per the erection strategy.</td><td>01</td></tr> <tr> <td>1b.</td><td>Strand Jacks for lifting of structures, Ceiling girders, modular preassembled components etc. as per the erection strategy.</td><td>01 Sets or more as per site requirement</td></tr> <tr> <td>2.</td><td>625/325MT/250MT capacity FMC/Crawler mounted/Tower crane or equivalent</td><td>03</td></tr> <tr> <td>3.</td><td>Crawler mounted crane or equivalent (150 MT capacity)</td><td>02</td></tr> <tr> <td>4.</td><td>Crawler mounted crane (100 MT capacity)</td><td>03</td></tr> <tr> <td>5.</td><td>Crawler mounted crane (75 MT capacity)</td><td>03</td></tr> <tr> <td>6.</td><td>Hydra cranes/Escorts/Tata P&H 320 or equivalent 18 MT capacity 8 MT capacity</td><td>04 08</td></tr> <tr> <td>7.</td><td>Passenger cum goods lift</td><td>02 per unit</td></tr> <tr> <td>8.</td><td>Electro hydraulic pipe bending machine</td><td>02</td></tr> <tr> <td>9.</td><td>Portable pipe cutting & chamfering machine</td><td>02</td></tr> <tr> <td>10.</td><td>Welding generator (320 Amp.)</td><td>100</td></tr> <tr> <td>11.</td><td>Welding Transformers</td><td>15</td></tr> <tr> <td>12.</td><td>Heat treatment transformers</td><td>02</td></tr> <tr> <td>13.</td><td>Induction Heating Machines</td><td>09</td></tr> <tr> <td>14.</td><td>Winches as per site requirement 10 MT 5 MT 3/2/1 MT</td><td>02 12 15</td></tr> <tr> <td>15.</td><td>Hydro test pumps for Boiler hydraulic test</td><td>2 sets</td></tr> <tr> <td>16.</td><td>Sky climbers</td><td>02</td></tr> <tr> <td>17.</td><td>MIG/CO₂ Welding machine</td><td>08</td></tr> <tr> <td>18.</td><td>Submerged arc welding machine</td><td>02</td></tr> <tr> <td>19.</td><td>DC arc welding machine</td><td>08</td></tr> </table> In case the bidder opts for erection strategy of SG by deploying tower cranes and pre-assembly yards, the bidder has to provide schedule and capacity and number of the cranes and related tools and plants for final deliberations and acceptance by Employer. For Material Receipt, Handling & Transportation <table> <tr> <th>S.No.</th><th>Description of T&P</th><th>Quantity (nos.)</th></tr> <tr> <td>1.</td><td>75 MT Crawler crane</td><td>02</td></tr> <tr> <td>2.</td><td>40 MT mobile crane</td><td>01</td></tr> <tr> <td>3.</td><td>18/14 MT mobile crane</td><td>02</td></tr> <tr> <td>4.</td><td>8 MT Hydro crane</td><td>02</td></tr> <tr> <td>5.</td><td>30/ 40 MT tractor trailer</td><td>01</td></tr> <tr> <td>6.</td><td>10/ 20 MT tractor trailer</td><td>02</td></tr> <tr> <td>7.</td><td>40 MT Electric gantry crane</td><td>02</td></tr> </table> ANNEXURE-B	S.No.	Description of T&P	Quantity (nos.)	1a.	600/750 MT Crane for lifting of structures, Ceiling girders etc. as per the erection strategy.	01	1b.	Strand Jacks for lifting of structures, Ceiling girders, modular preassembled components etc. as per the erection strategy.	01 Sets or more as per site requirement	2.	625/325MT/250MT capacity FMC/Crawler mounted/Tower crane or equivalent	03	3.	Crawler mounted crane or equivalent (150 MT capacity)	02	4.	Crawler mounted crane (100 MT capacity)	03	5.	Crawler mounted crane (75 MT capacity)	03	6.	Hydra cranes/Escorts/Tata P&H 320 or equivalent 18 MT capacity 8 MT capacity	04 08	7.	Passenger cum goods lift	02 per unit	8.	Electro hydraulic pipe bending machine	02	9.	Portable pipe cutting & chamfering machine	02	10.	Welding generator (320 Amp.)	100	11.	Welding Transformers	15	12.	Heat treatment transformers	02	13.	Induction Heating Machines	09	14.	Winches as per site requirement 10 MT 5 MT 3/2/1 MT	02 12 15	15.	Hydro test pumps for Boiler hydraulic test	2 sets	16.	Sky climbers	02	17.	MIG/CO ₂ Welding machine	08	18.	Submerged arc welding machine	02	19.	DC arc welding machine	08	S.No.	Description of T&P	Quantity (nos.)	1.	75 MT Crawler crane	02	2.	40 MT mobile crane	01	3.	18/14 MT mobile crane	02	4.	8 MT Hydro crane	02	5.	30/ 40 MT tractor trailer	01	6.	10/ 20 MT tractor trailer	02	7.	40 MT Electric gantry crane	02
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		Sl. No.	T&P	Nos. to be deployed
		1.	Crawler mounted Crane(75 MT capacity)	01
		2.	Mobile crane (40 MT capacity)	01
		3.	Mobile crane (18/14 MT capacity)	02
		4.	Hydra crane 8 MT	02
		5.	30/40 MT tractor trailer	01
		6.	10/20 MT tractor trailer	02
		PS: 1. The deployment of T&Ps shall be ensured by the agency as per actual requirement to meet the project implementation schedule. Based on the proposed erection strategy of the vendor, the details of T&Ps and their deployment schedule shall be firmed up with the EPC agency during post bid discussion. 2. The suggested tools and plants have been indicated for SG and TG main plant packages. The bidder has to furnish the tools and plant requirements for the off-site areas like CHP, AHP, DM plant, switchyard, etc for final acceptance of Employer during pre-award discussions. However, for CHP pkg the bidder has to ensure timely availability of 150MT & 250MT crane for completion of the CHP work as per schedule. The exact deployment schedule may be finalized in consultation with Employer site.		
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS)		PAGE 12 OF 18

BDS Item No.	ITB Clause ref., if any	Data																		
		List of suggestive safety Equipments/PPEs to be included in List of minimum T&P: <table> <tr> <th>Sl. No.</th><th>Minimum Suggested List of Safety Equipments and Safety Personal Protective Equipments</th><th>Minimum Quantity</th></tr> <tr> <td>1.</td><td> Safety Net (Conforming IS 11057:1984) Safety Net (Net Size: 10m x 5m, Mesh Size: 25 mm, Mesh Rope: 2mm double cord, Border/Tie Cord: 12mm diameter polypropylene rope (tested as per IS: 5175). Two metres length shall be provided at all four corners. </td><td>240 Nos.</td></tr> <tr> <td>2.</td><td> Fall Arrestor 'Rope grab fall arrestor' & anchorage line. Anchorage Line: 14mm- 16 mm diameter, three strand twisted Polyamide rope. Rope Grab fall arrestor: Openable & Guided type Fall Arrestor (on flexible line) conforming EN 353-2 & works on 14-16 mm diameter polyamide rope. material: Nickel Chrome plated Steel Connector: Karbiner conforming to EN 362 (Minimum Strength 22 KN), material: Steel </td><td> 200 nos. of Rope Grab Fall arrestor' and Karbiner each. 90 nos. anchorage line, 30 metre long each, 30 nos. anchorage line, 40 metre long each </td></tr> <tr> <td>3.</td><td> Horizontal life line Stainless Steel Wire rope of 8mm diameter. Minimum six nos. of steel U-bolt clips are required for clamping each wire rope to a rigid support (03 nos. of U-bolt clips at each end). </td><td> 40 nos. of wire rope, each 40 metre long 90 nos. of wire rope, each 25 metre long. </td></tr> <tr> <td>4.</td><td> Ladders on column The minimum design live load on metallic ladder shall be a single concentrated load of 100 kilo grams. All rungs shall have a minimum diameter of 1.90 centimeters, and minimum clear length of rungs shall be 40.6 centimeters. The distance between rungs shall not exceed 30.5 centimeters. Each ladder shall have maximum height of 9.0 metre. The ladder shall have proper fastenings for attaching it to a column using positive means such as bolt, weld or other type of fasteners. </td><td>cumulative length of ladders is 1200 metres</td></tr> <tr> <td>5.</td><td> Safety PPEs (Industrial Safety helmet & Industrial Safety Shoes) Industrial Safety Helmet (IS:2925-1984 marked). Industrial Safety/Electrical Shoes (IS:15298-2002 marked). Full body Safety Harness (conforming IS:3521) </td><td> 1575 nos. 1575 nos. 395 nos. </td></tr> </table>	Sl. No.	Minimum Suggested List of Safety Equipments and Safety Personal Protective Equipments	Minimum Quantity	1.	Safety Net (Conforming IS 11057:1984) Safety Net (Net Size: 10m x 5m, Mesh Size: 25 mm, Mesh Rope: 2mm double cord, Border/Tie Cord: 12mm diameter polypropylene rope (tested as per IS: 5175). Two metres length shall be provided at all four corners.	240 Nos.	2.	Fall Arrestor 'Rope grab fall arrestor' & anchorage line. Anchorage Line: 14mm- 16 mm diameter, three strand twisted Polyamide rope. Rope Grab fall arrestor: Openable & Guided type Fall Arrestor (on flexible line) conforming EN 353-2 & works on 14-16 mm diameter polyamide rope. material: Nickel Chrome plated Steel Connector: Karbiner conforming to EN 362 (Minimum Strength 22 KN), material: Steel	200 nos. of Rope Grab Fall arrestor' and Karbiner each. 90 nos. anchorage line, 30 metre long each, 30 nos. anchorage line, 40 metre long each	3.	Horizontal life line Stainless Steel Wire rope of 8mm diameter. Minimum six nos. of steel U-bolt clips are required for clamping each wire rope to a rigid support (03 nos. of U-bolt clips at each end).	40 nos. of wire rope, each 40 metre long 90 nos. of wire rope, each 25 metre long.	4.	Ladders on column The minimum design live load on metallic ladder shall be a single concentrated load of 100 kilo grams. All rungs shall have a minimum diameter of 1.90 centimeters, and minimum clear length of rungs shall be 40.6 centimeters. The distance between rungs shall not exceed 30.5 centimeters. Each ladder shall have maximum height of 9.0 metre. The ladder shall have proper fastenings for attaching it to a column using positive means such as bolt, weld or other type of fasteners.	cumulative length of ladders is 1200 metres	5.	Safety PPEs (Industrial Safety helmet & Industrial Safety Shoes) Industrial Safety Helmet (IS:2925-1984 marked). Industrial Safety/Electrical Shoes (IS:15298-2002 marked). Full body Safety Harness (conforming IS:3521)	1575 nos. 1575 nos. 395 nos.
Sl. No.	Minimum Suggested List of Safety Equipments and Safety Personal Protective Equipments	Minimum Quantity																		
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KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS)																		
		PAGE 13 OF 18																		

BDS Item No.	ITB Clause ref., if any	Data	
SUGGESTED LIST OF PLANT, EQUIPMENT AND MACHINERY REQUIRED TO BE DEPLOYED BY CONTRACTOR AT SITE FOR CIVIL WORK			
	Sl. No.	Description	Main Plant and Offsite Civil Works Chimney & Chimney Elevator
	1. a)	Pneumatic wagen drills with compressor for controlled blasting	As per requirements
	b)	Portable magazine	As per requirements
	c)	Rock breaker (Hydraulically operated & attached with 2 Cu.M. bucket capacity Excavator)	3 nos.
	2. a)	Crane - 250 MT	1
	b)	Crane - 150 MT	2
	c)	Crane - 80 MT (Tyre mounted)	1
	d)	Crane - 35 MT	1
	3.	Crane – 100 MT/75MT	3
	4. a)	Gantry Crane - 40 MT	3
	b)	Gantry Crane - 30 MT	1
	c)	Mobile Crane - 20 MT	3
	d)	Mobile Crane - 8 MT	1
	5.	Hydra 12 MT	12 2
	6.	Tractor - 50 H.P.	4 As per requirement
	a)	Trailers–50 MT capacity	3 As per requirement
	b)	Trailers–10 to 15MT capacity	6 As per requirement
	8.	Trolley for transporting fabricated material	6 As per requirement
	9.	Submerged Arc Automatic Welding Machine (except for fabrication of CW liner, for other structural fabrication, it may be substituted by suitable numbers of MIG Welding)	4
	10.	MIG welding set	60
	11.	Welding transformer	10 10
	12.	Welding generator / rectifiers -	
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS)	PAGE 14 OF 18

BDS Item No.	ITB Clause ref., if any	Data	
	400 A to 600 A		
	a) for Structural Steel Works	60	10
	b) for CW liner	4	
	13. a) Pug cutting machine	24	6
	b) Gas cutting machine		4
	14. a) Pillar drill machine - up to 2"	4	1
	b) Radial drill machine		2
	15. Bench grinder	6	2
	16. Hand grinder	24	As per requirement
	17. Flexible grinder	5	
	18. Portable drill machine	6	
	19. Cutting torches	20	As per requirement
	20. Electrical power winches for varying capacities	30	
	21. Chain pulley block - 5 MT to 20 MT	10	
	22. Chain pulley block - 1 MT to 5 MT	6	
	23. Radiographic testing machine	3	
	24. Ultrasonic testing machine	3	
	25. Dye penetration test	As per requirement	
	26. Destructive testing equipment	As per requirement	
	27. Lab equipment	As per Part-C	As per Part-4
		Volume-IA	Volume-IB
	28. Batching plant (with computer printout of quantities)		
	a) 30 Cu.M./Hr.	1 Set	1 Set
	b) 40 Cu.m./Hr.	2 Set	
	29. Concrete mixers		
	10/7Cu.M./hr. capacity	4	
	30. Transit mixer-minimum 5.0 Cu.M. capacity	8	4
	31. Concrete pump-37 Cu.M/Hr.	4	1
	32. Excavator (Poclain and J.C.B.)	3 + 4	
	33. Vibrators - Needle type	10	12
	34. Vibrators - Float, plate etc.	3	
	35. Staging for TG / BFP/ID Fan	1	
	- Full set for one unit		
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS)	
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BDS Item No.	ITB Clause ref., if any	Data	
	36. Lathe machine	3	
	37. De-watering pumps		
	(Excluding deepwell dewatering system)		
	i) 3 H. P. to 5 H.P.	6	
	ii) 10 H.P. to 20 H.P.	6	2
	38. Sludge pump	1	
	39. High head pump	2	2
	40. Dumper / trucks	10	
	41. Scaffolding units including shuttering plates	As per requirement	
	42. Service compressor with hose	3	
	43. Floor cutting and polishing machine	3	
	44. Speed winches / Hoists	6	5
	(for concrete and other building material)		
	45. Jack hammers/Pavement Breakers	3	
	46. Scaffolding pipe staging including clamps	25 MT	
	47. Marble / Tile cutting machine.	4	
	48. Vibro compactor/vibro roller / double drum vibratory roller		
	i) Drum width 500mm	1	
	ii) Drum width 750mm	1	
	iii) Drum width 900mm	1	
	iv) Plate Compactor	4	
	49. Truck mounted concrete pump alongwith mixer/ alternatively truck mounted mixer with placing boom of minimum 40M high	2	
	50. Portable hydraulic hammer / chisel	1	
	51. Concrete coring machine for drilling in concrete upto 150mm diameter along with diamond bits	1	
	52. Total workstation for surveying including digital theodolite and digital level.	1	
	53. Painting equipment set complete with compressor, hopper, screen, blasting hose pipe, nozzle, airless / conventional Spray etc.	10 sets	
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS)	
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BDS Item No.	ITB Clause ref., if any	Data	
	54. Plate Bending Machine	2	1
	(25mm x 2500 mm)		
	55. Plasma cutting machine	1	
	56. Concrete paver / spreader	As required	
	57. Concrete sawing machine	1	
	for cutting slit type opening		
	in concrete		
	58. Water tanker	3	
	59. Arrangement of construction	As required	
	water complete with pumps /		
	pipes / water tanker / under-		
	ground tank / overground		
	tank etc.		
	60. Preheating / post weld heat	As required	
	treatment equipment / arrange-		
	ment for welding of structures		
	61. Rebar detector for detecting	1	
	the reinforcement bar position		
	in concrete before creating,		
	in situ opening.		
	62. DG Set 125 KVA	3	1
	(Total capacity of 500kVA of		
	generation capacity to be deployed		
	from 4 or more number of DG Sets)		
	63. Plate straightening machine		
	(i) 20 X 2500 MM	1	
	64. Chipping Hammer	2	
	65. Punching Machine	4 Sets	
	(Minimum Letter size 20 mm)		
	66. Bar Bending and Cutting Machine	4	
	67. Bull dozer	As required	
	68. Road Paver & Finisher	As required	
	69. Roller (10 Tonne Capacity)	2	
	70. Sheep Foot Roller	1	
	71. Slipform Shuttering equipment		1
	72. Chimney Raft Shuttering materials		1100 (Sq.M)
	73. Verticality Measuring Plumb		As required
	74. Verticality Measuring Laser System		2
	75. HT Wire		As required
	76. Well point dewatering system	As per	
		requirement	
	77. Misc. Tools & Tackles	As Required	
	78. Builder Tower Hoist	4	
	79. Concrete boom placer	2	
	80. Collapsible mobile shed		As required
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS)	
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BDS Item No.	ITB Clause ref., if any	Data
		for outdoor welding work.
	81. Concrete pavement cutters	
	With wet diamond saw cutter	
	For cutting pavement of	
	Thickness up to 300mm	As required
	NOTES : a) These requirements and capacity of the equipment are indicative only and not exhaustive and deployment of the equipment, machinery and labour shall be suitably augmented to achieve the timely completion of the work as per the program and directions of the engineer-in-charge, without any additional cost to Owner. Deployment schedule of major equipment to be mentioned in L2 Program b) Other materials like cables, sling, gloves, goggles, safety belts, safety helmets, heating oven, pre-heating / post weld heat treatment arrangement, material for making platform and platform support etc. shall be mobilised as per requirement. c) Other equipment though required for the timely completion of the job but not listed above shall be deployed by the contractor, as per the job requirements and as directed by the Engineer. d) The contractor shall make suitable provisions for repairs and maintenance of the equipment mobilised and always keep them in good working conditions, as the repair facilities for such equipment are not available at the project site. e) A minimum stock of 15 days of gas and 30 days of electrode shall be maintained at the site. f) A minimum stock of aggregate & sand of two weeks shall be maintained at site. g) All cranes shall be crawler mounted. h) The bidder shall be required to furnish along with document the deployment of tools & equipment correlating with the monthly output / productivity. This shall be finalized during pre-award discussion. i) For all columns & sub-structure beams of TG foundation, sets of formwork for all columns & beams of each level are to be deployed so that all the columns and beams at each level can be cast simultaneously.	
KODERMA THERMAL POWER STATION PHASE-II (2X800MW); BID DOC NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB		EPC PACKAGE SECTION – III (BDS)
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APPROVED QR FOR EPC PACKAGE FOR KTPS PH-II (2X800 MW)

1.0.0 The Bidder should meet the qualifying requirements of any one of the qualifying routes stipulated under clause 1.1.0 or 1.2.0 or 1.3.0 or 1.4.0 or 1.5.0 or 1.6.0 or 1.7.0. In addition, the Bidder should also meet the requirements stipulated under clause 2.0.0, 3.0.0, 4.0.0 & 5.0.0 together with the requirements stipulated under section ITB.

1.1.0 Route 1: Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer

1.1.1(A) The Bidder should have designed, engineered, manufactured/got manufactured, erected/supervised erection, commissioned/supervised commissioning of at least one (1) number of pulverized coal fired supercritical Steam Generator having rated capacity of 1500 tonnes of steam per hour or higher. Further, such Steam generator should be of the type specified, i.e. single pass (tower type) or two pass type using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing, and should have been in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening. In addition, the above Steam Generator should have been provided with evaporator suitable for variable pressure operation (sub-critical and super-critical pressure ranges). The Bidder shall offer only the type of Steam Generator and type of water wall tubing for which he is qualified.

AND/OR

1.1.1(B) The Bidder should have designed, engineered, manufactured / got manufactured, erected / supervised erection, commissioned / supervised commissioning of (i) at least one (1) number supercritical steam turbine of tandem compound, condensing, reheat type of 500 MW or higher capacity with main steam pressure, of 225 Kg/cm² (gauge) or higher and main steam / reheat temperature of 565 °C / 565 °C or higher and (ii) at least one (1) number of generator of two pole, Thermal class 155(F) winding insulation, hydrogen / water cooled stator and hydrogen / water cooled rotor of 500MW or above capacity. These steam turbine and generator should have been in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening.

1.1.2 The Bidder should have registered in India under the Companies Act of India, either a Subsidiary Company or a Joint Venture (JV) Company for manufacturing of supercritical steam generator sets and/or supercritical steam turbine generator sets for which it is qualified.

(a) In case the Bidder has formed a Subsidiary Company then the Subsidiary Company of the Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer should have been registered in India under the Companies Act of India for manufacturing supercritical steam generator and/or supercritical steam turbine generator sets covering the type, size and rating specified as on the date of techno-commercial bid opening. If the Subsidiary Company is registered as a public limited Company then it should have obtained certificate for Commencement of Business in India as on the date of techno-commercial bid opening.

The Subsidiary Company shall remain a subsidiary Company of the Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer for a minimum period of 7 years from the date of incorporation of such Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

(b) In case the Bidder has formed a JV Company then, the Joint Venture (JV) Company should have been incorporated in India under the Companies Act of India, as on the date of techno-commercial bid opening and promoted by (i) an Indian Company registered in India under the Companies Act of India and (ii) a Qualified Steam

Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer, for the purpose of manufacturing supercritical steam generator and/or supercritical steam turbine generator sets covering the type, size and rating specified. If the JV Company is incorporated as a public limited Company then it should have obtained certificate for Commencement of Business in India as on the date of techno-commercial bid opening.

The Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer shall maintain a minimum equity participation of 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

One of the promoters shall be a majority stakeholder who shall maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

- (c) In case the Bidder meets the requirements indicated at 1.1.1(A)/(B) and 1.1.2(a)/(b) for either steam Generator sets or steam turbine generator sets (and not for both) then the Bidder shall associate/ collaborate for the other equipment with either of the following and shall source the equipment i.e. steam turbine generator set or steam generator set, only from such qualified associate.

(i) Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) or 1.1.1(A) above as the case may be along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the respective equipment

Or

(ii) Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1(a) in conjunction with 1.4.3 (if applicable) as the case may be along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iii) Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator and/or supercritical Steam turbine Generator (as the case may be) and 3.0.0 for the respective equipment.

- 1.1.3 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

DJU	Executants	BG
For Steam Generator	The Bidder	-----
	Indian Subsidiary / JV Company for steam Generator	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for steam Generator	0.15%
	QSGM (applicable if other than bidder)	0.3%
For Steam Generator (if the Steam Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator	The Bidder	-----
	QSTGM (applicable if other than bidder)	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator	0.15%

DJU	Executants	BG
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Turbine Generator	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (if the Steam turbine Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Project Management If applicable as per clause 4.1.0	The Bidder	-----
	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

1.1.4 A super critical steam turbine manufacturer who meets the requirements of clause 1.1.1(B) except for generator would also qualify provided the Subsidiary Company / JV Company (as the case may be) associates and have a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator, hereinafter referred to as Qualified Generator Manufacturer.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian Subsidiary Company or the JV Company (as the case may be), for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary Company or JV Company (as the case may be) or up to the end of defect liability period of the contract whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.1.3 above.

1.2.0 NOT USED

1.2.1 NOT USED

1.2.2 NOT USED

1.2.3 NOT USED

Route 1.2.0 has not been used for the purpose of qualification in these Qualifying Requirements. Wherever Clause 1.2.0, 1.2.1, 1.2.2 & 1.2.3 have been referred to either directly or indirectly in any qualification routes / financial criteria, the same should be deemed to have been omitted and qualifying requirements should be read accordingly.

1.3.0 Route 3: Indian Subsidiary Company of a Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer

1.3.1(a) The Bidder shall be an Indian Subsidiary Company of a Qualified Steam Generator Manufacturer and/or a Qualified Steam Turbine Generator Manufacturer meeting requirements of clause 1.1.1(A) and/or 1.1.1(B) (as the case may be), registered in India under the Companies Act of India, as on the date of techno-commercial bid opening, for manufacturing supercritical steam generator and/or supercritical Steam Turbine Generator sets covering the type, size and rating specified. If the Subsidiary Company is incorporated as a public limited Company then it should have obtained certificate for Commencement of Business in India as on the date of techno-commercial bid opening.

The Subsidiary Company shall remain a subsidiary Company of the Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer for a minimum period of 7 years from the date of incorporation of such Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

(b) In case the Bidder meets the requirements indicated at 1.3.1(a) for either steam Generator sets or steam turbine generator sets (and not for both) then the Bidder shall associate/ collaborate for the other equipment with either of the following and shall source the equipment i.e. steam turbine generator set or steam generator set, only from such qualified associate.

(i) Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) or 1.1.1(A) above as the case may be along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the respective equipment

Or

(ii) Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1(a) in conjunction with 1.4.3 (if applicable) as the case may be along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iii) Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator and/or supercritical Steam turbine Generator (as the case may be) and 3.0.0 for the respective equipment.

1.3.2 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

DJU	Executants	BG
For Steam Generator	The Bidder	-----
	QSGM	0.3%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Generator	0.15%
	Indian Subsidiary Company / JV Company for Steam Generator (applicable if other than bidder)	0.15%
For Steam Generator (if the Steam Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator	The Bidder	-----
	QSTGM	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator (applicable if other than bidder)	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Turbine Generator	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (if the Steam turbine Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Project Management If applicable as per clause 4.1.0	The Bidder	-----
	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder		

DJU	Executants	BG
shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

- 1.3.3 In case the Bidder is an Indian Subsidiary Company of a super critical steam turbine manufacturer as its promoter meeting the requirements of clause 1.1.1(B) except for generator or if the Bidder's associate is supercritical steam turbine manufacturer meeting the requirements of clause 1.1.1(B) except for generator would also qualify provided the Subsidiary Company / JV Company of the supercritical steam turbine generator manufacturer associates and has a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian Subsidiary Company / JV Company for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary Company /JV Company or up to the end of defect liability period of the contract, whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.3.2 above.

- 1.4.0 **Route 4: Indian Joint Venture (JV) Company for manufacturing of Super Critical Steam Generator and/or Super Critical Steam Turbine Generator in India between an Indian Company and a Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer**

- 1.4.1(a) The Bidder shall be a Joint Venture (JV) Company incorporated in India under the Companies Act of India, as on the date of techno-commercial bid opening, promoted by (i) an Indian Company registered in India under the Companies Act of India and (ii) a Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer meeting requirements of clause 1.1.1(A) and/or 1.1.1(B) (as the case may be), created for the purpose of manufacturing in India supercritical steam generator and/or supercritical steam turbine generator sets covering the type, size and rating specified. If the JV Company is incorporated as a public limited Company then it should have obtained certificate for Commencement of Business in India as on the date of techno-commercial bid opening.

The Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer shall maintain a minimum equity participation of 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

One of the promoters shall be a majority stakeholder who shall maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

In the event that the majority stake holder in the JV Company is an entity other than the Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer, it should be an Indian Company and should have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10000 million or more. At least one of such projects should have a contract value of INR 4000 million or more. These projects shall be in successful operation for a period of not less than one year prior to the date of techno-commercial bid opening.

(b) In case the Bidder meets the requirements indicated at 1.4.1(a) for either steam Generator sets or steam turbine generator sets (and not for both) then the Bidder shall associate/ collaborate for the other equipment with either of the following and shall source the equipment i.e. steam turbine generator set or steam generator set, only from such qualified associate.

(i) Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) or 1.1.1(A) above as the case may be along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the respective equipment

Or

(ii) Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1(a) in conjunction with 1.4.3 (if applicable) as the case may be along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iii) Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator and/or supercritical Steam turbine Generator (as the case may be) and 3.0.0 for the respective equipment.

1.4.2 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

DJU	Executants	BG
Steam Generator	The Bidder	----
	QSGM	0.3%
	Other promoter having 25% or higher equity participation in Indian Subsidiary/ JV Company for Steam Generator	0.15%
	Indian Subsidiary/ JV Company for Steam Generator (applicable if other than bidder)	0.15%
For Steam Generator (if the Steam Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator	The Bidder	-----
	QSTGM	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator (applicable if other than bidder)	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Turbine Generator	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (if the Steam turbine Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Project Management If	The Bidder	-----

DJU	Executants	BG
applicable as per clause 4.1.0	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

- 1.4.3 In case the Bidder is an Indian Joint Venture Company with a super critical steam turbine manufacturer as one of the promoters meeting the requirements of clause 1.1.1(B) except for generator or if the Bidder's associate is supercritical steam turbine manufacturer meeting the requirements of clause 1.1.1(B) except for generator would also qualify provided the JV Company/ Subsidiary Company of the super critical steam turbine generator manufacturer associates and have a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian JV Company / Subsidiary Company, for a lock-in period of 7 years from the date of incorporation of the Indian JV Company / Subsidiary Company or up to the end of defect liability period of the contract whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.4.2 above.

- 1.5.0 **Route 5: Indian Company who holds at least 51% equity in a Joint Venture Company for manufacturing Super Critical Steam Generator and/or supercritical Steam Turbine Generator sets in India between an Indian Company and a Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer**

- 1.5.1(a) The Bidder shall be Indian Company who holds majority stake in a Joint Venture Company incorporated in India under the Companies Act of India as on the date of techno-commercial bid opening, promoted by (i) a Company registered in India under the Companies Act of India and (ii) a Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer meeting requirements of clause 1.1.1(A) and/or 1.1.1(B) (as the case may be),

created for the purpose of manufacturing supercritical steam generator and/or supercritical steam turbine generator sets in India, covering the type, size and rating specified. If the JV Company is incorporated as a public limited Company then it should have obtained certificate for Commencement of Business in India as on the date of techno-commercial bid opening.

The Qualified Steam Generator and/or Qualified Steam Turbine Generator Manufacturer shall maintain a minimum equity participation of 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The Bidder shall maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The Bidder should have executed in the last 10 years industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10000 million or more. At least one of such projects should have a contract value of INR 4000 million or more. These projects shall be in successful operation for a period of not less than one year prior to the date of techno-commercial bid opening.

- (b) In case the Bidder meets the requirements indicated at 1.5.1(a) for either steam Generator sets or steam turbine generator sets (and not for both) then the Bidder shall associate/ collaborate for the other equipment with either of the following and shall source the equipment i.e. steam turbine generator set or steam generator set, only from such qualified associate.

(i) Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) or 1.1.1(A) above as the case may be along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the respective equipment

Or

(ii) Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1(a) in conjunction with 1.4.3 (if applicable) as the case may be along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iii) Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator and/or supercritical Steam turbine Generator (as the case may be) and 3.0.0 for the respective equipment.

- 1.5.2 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

DJU	Executants	BG
For Steam Generator	The Bidder	----
	QSGM	0.3%
	Indian Subsidiary / JV Company For Steam Generator	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary/ JV Company for Steam Generator (applicable if other than bidder)	0.15%
For Steam Generator (if the Steam	The Bidder	-----

DJU	Executants	BG
Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator	The Bidder	-----
	QSTGM	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Turbine Generator (applicable if other than bidder)	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (if the Steam turbine Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Project Management If applicable as per clause 4.1.0	The Bidder	-----
	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

- 1.5.3 In case the Indian Joint Venture Company of the Bidder has a super critical steam turbine manufacturer as one of its promoters, who meets the requirements of clause 1.1.1(B) except for generator or if the Bidder's associate is supercritical steam turbine manufacturer meeting the requirements of clause 1.1.1(B) except for generator would also qualify provided the JV Company/ Subsidiary Company of the supercritical steam turbine generator

manufacturer associates and have a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian JV Company/ Subsidiary Company, for a lock-in period of 7 years from the date of incorporation of the Indian JV Company/ Subsidiary Company or up to the end of defect liability period of the contract whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.5.2 above.

1.6.0 Route 6: Indian Steam Generator and/or Indian Steam Turbine Generator Manufacturer

1.6.1 The bidder should be an Indian manufacturing company which is a supercritical Steam Generator manufacturer and/or a supercritical Steam turbine Generator manufacturer, as the case may be, and meets the following criteria.

Eight (8) Nos. supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be) manufactured/supplied in India by the Indian Subsidiary/JV Company / Indian manufacturing company should be in commercial operation (achieved COD) out of which four (4) such Steam Generators and/or Steam Turbine Generators (as the case may be) should have been in commercial operation for at least one year and Performance Guarantee (PG) Test should have been successfully completed in any two (2) such Steam Generators and/or steam turbine generators (as the case may be) prior to the date of techno-commercial bid opening.

In case any problem related to supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be) & Auxiliaries is encountered during execution of the contract, bidder shall resolve the same within a reasonable time (in the opinion of the owner) by itself/through its collaborator/through firm having competency to resolve such issues. If the problem is not resolved within a reasonable period of time in the opinion of the owner, Owner shall have the option to approach directly to the collaborator/licensor/technology Provider or any other firm to resolve the issue. In such a case the financial expenditure(s) incurred by Owner for resolution of such issues will be to bidder's account. Accordingly, bidder shall be required to submit a letter along with the techno commercial bid valid up to the end of defect liability period of the contract, as per the format enclosed in the bidding documents.

The bidder shall offer only the type of steam generator and the steam turbine generator for which it or its collaborator / associate (as per clause 1.6.2 below) is qualified.

1.6.2(a) In case the Bidder meets the requirements indicated at 1.6.1 above for either steam Generator sets or steam turbine generator sets (and not for both) then the Bidder shall associate/ collaborate for the other equipment with either of the following and shall source the equipment i.e. steam turbine generator sets or steam generator sets, only from such qualified associate.

(i) Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) or 1.1.1(A) above as the case may be along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the respective equipment

Or

(ii) Indian Steam Generator and Steam Turbine Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.2.1 in conjunction with 1.2.3 (as applicable) above along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iii) Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer or Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1(a) in conjunction with 1.4.3 (if applicable) as the case may be along with requirements stipulated at 3.0.0 for the respective equipment

Or

(iv) Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator or supercritical Steam turbine Generator (as the case may be) and 3.0.0 for the respective equipment.

(b) The Bidder seeking qualification under (a) above shall furnish Deeds of Joint Undertaking (DJUs) for the respective equipment (as applicable) as per the following table:

DJU	Executants	BG
For Steam Generator (applicable if the Steam Generator is being sourced from the associate as per clause 1.6.2 (a) (i) or 1.6.2 (a) (iii))	The Bidder	----
	QSGM	0.3%
	Other promoter having 25% or higher equity participation in Indian Subsidiary/ JV Company for Steam Generator	0.15%
	Indian Subsidiary/ JV Company for Steam Generator	0.15%
For Steam Generator (applicable if the Steam Generator is being sourced from the associate as per clause 1.6.2 (a) (ii))	The Bidder	----
	QSGM	0.3%
	Indian Steam Generator and Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.2.1 (Applicable if other than bidder)	0.15%
For Steam Generator (applicable if the Steam Generator is being sourced from the associate as per clause 1.6.2 (a) (iv))	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator (applicable if the Steam turbine Generator is being sourced from the associate as per clause 1.6.2 (a) (i) or 1.6.2 (a) (iii))	The Bidder	-----
	QSTGM	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator	0.15%
	Other promoter having 25% or higher equity participation in Indian Subsidiary Company / JV Company for Steam Turbine Generator	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam Turbine Generator (applicable if the Steam turbine Generator is being sourced from the associate as per clause 1.6.2 (a) (ii))	The Bidder	-----
	QSTGM	0.3%
	Indian Steam Generator and Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.2.1 in	0.15%

DJU	Executants	BG
	conjunction with 1.2.3 (as applicable) (Applicable if other than bidder)	
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (applicable if the Steam turbine Generator is being sourced from the associate as per clause 1.6.2 (a) (iv))	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ If the Steam Generators/steam turbine generators are being sourced from the associate as per clause 1.6.2 (a) (ii), then in the Deed of Joint Undertaking the liability of the Qualified Steam Generator manufacturer / Qualified steam turbine generator manufacturer shall be as defined at clause 1.2.2 for the respective equipment as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

1.6.3 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

For Project Management If applicable as per clause 4.1.0	The Bidder	-----
	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

1.6.4 In case the Bidder's associate is supercritical steam turbine manufacturer meeting the requirements of clause 1.1.1(B) except for generator would also qualify provided the JV Company/ Subsidiary Company of the super critical steam turbine generator manufacturer associates and have a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian JV Company / Subsidiary Company, for a lock-in period of 7 years from the date of incorporation of the Indian JV Company / Subsidiary Company or up to the end of defect liability period of the contract whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.6.2 above.

1.7.0 Route 7: Company having experience of 500MW Supercritical units on EPC Basis

1.7.1(a) The Bidder should have executed on Engineering, Procurement and Construction (EPC) basis, minimum one (1) no. 500MW or above pulverized Coal fired Supercritical unit comprising of at least steam generator and steam turbine generator sets along with their associated auxiliary equipments, electrostatic precipitators/bag filters, Switchyard, Coal Handling plant, Ash handling plant, Cooling Towers, Condenser Cooling water system, including associated civil works for the above equipments and systems, which is in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening.

(b) The Bidder meeting the requirements indicated at 1.7.1(a) above except for electrostatic precipitators/bag filters, Switchyard, Coal Handling plant, Ash handling plant, Cooling Towers, Condenser Cooling water system, would also qualify provided the Bidder meets the requirement indicated at 4.1.0(b) or associates with a Project Management Organization meeting the requirement indicated at 4.1.0(b).

1.7.2 The Bidder shall associate/ collaborate for the (i) Steam Generator and (ii) Steam Turbine Generator sets and shall source these equipments only from the Associate / Collaborator who meets the following:

(i) Qualified Steam Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(A) along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the Steam Generator

Or

Indian subsidiary / JV Company of Qualified Steam Generator Manufacturer, who shall in turn meet the requirements, stipulated at 1.3.1(a) or 1.4.1(a) as the case may be along with requirements stipulated at 3.0.0 for the Steam Generator

Or

Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam Generator and 3.0.0 for the respective equipment.

(ii) Qualified Steam Turbine Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.1.1(B) in conjunction with 1.1.4 (as applicable) above along with requirements stipulated at 1.1.2 (a) / (b) and 3.0.0 for the Steam Turbine Generator Sets.

Or

Indian subsidiary / JV Company of Qualified Steam Turbine Generator Manufacturer, who shall in turn meet the requirements stipulated at 1.3.1(a) in conjunction with 1.3.3 (if applicable) or 1.4.1 (a) in conjunction with 1.4.3 (if applicable) along with requirements stipulated at 3.0.0 for the Steam Turbine Generator Sets.

Or

Indian Subsidiary Company / JV Company / Indian manufacturing company meeting the requirements of clause 1.6.1 in respect of supercritical Steam turbine Generator and 3.0.0 for the respective equipment.

1.7.3 The Bidder shall furnish Deeds of Joint Undertaking (DJUs) as per the following table:

DJU	Executants	BG
For Steam Generator	The Bidder	-----
	QSGM	0.3%
	Indian Subsidiary / JV Company for Steam Generator	0.15%
	Other promoter having 25% or higher equity participation in	0.15%

DJU	Executants	BG
	Indian Subsidiary Company / JV Company for Steam Generator	
For Steam Generator (if the Steam Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Steam Turbine Generator	The Bidder	-----
	QSTGM	0.3%
	Indian Subsidiary / JV Company for Steam Turbine Generator	0.15%
	Other promoter having 25% or higher equity participation in associate's Indian Subsidiary Company / JV Company for Steam Turbine Generator	0.15%
	Qualified Generator Manufacturer (If applicable)	0.1%
For Steam turbine Generator (if the Steam turbine Generator is being sourced from the associate meeting the requirement of clause 1.6.1)	The Bidder	-----
	Indian Subsidiary / JV Company/ Indian manufacturing company meeting requirements at 1.6.1 & 3.0.0	0.3%
For Project Management If applicable as per clause 4.1.0(b)	The Bidder	-----
	Project Management Organization	INR 20 Million
For Engineering If applicable as per clause 5.0.0	The Bidder	----
	Architect Engineering Firm	INR 1.5 Million
➤ In the Deed of Joint Undertaking for Steam Generator and Auxiliaries, all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to steam generator and auxiliaries as per the format enclosed in the bidding documents. ➤ In the Deed of Joint Undertaking for Steam Turbine Generator and Auxiliaries all the executants of DJU shall be jointly and severally liable to the Employer for successful performance of the contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system as per the format enclosed in the bidding documents. ➤ Qualified Generator Manufacturer (where ever applicable) shall be liable to the Employer for successful performance of the generator and its auxiliaries as per the format enclosed in the bidding documents. ➤ Where the Bank Guarantee (BG) amount is indicated as %, the same shall be % of the total contract price. ➤ In case the Bidder gets qualified using notes and/or other clauses then the DJU and BG requirement indicated in such notes / clauses shall also apply in addition to above. ➤ The Deeds of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. ➤ Applicable BGs are in addition to the contract performance security to be furnished by the Bidder. ➤ Applicable BGs shall be furnished in case of award.		

- 1.7.4 In case the Bidder's associate is supercritical steam turbine manufacturer meeting the requirements of clause 1.1.1(B) except for generator would also qualify provided the Subsidiary Company / JV Company of the

supercritical steam turbine generator manufacturer associates and has a Technology Transfer agreement with a Generator Manufacturer who meets the requirements of clause 1.1.1(B) fully in respect of generator.

The Qualified Generator Manufacturer shall maintain a minimum equity participation of 10 % in the Indian Subsidiary Company / JV Company for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary Company /JV Company or up to the end of defect liability period of the contract, whichever is later.

The Qualified Generator Manufacturer shall necessarily be one of the executants of DJU being submitted by the Bidder (for steam turbine generator and auxiliaries) as per clause 1.7.3 above.

Notes for clause 1.0.0

(1) Definitions

- (i) "Qualified Steam Generator Manufacturer" (QSGM) means a manufacturer meeting requirements stipulated at 1.1.1(A).
- (ii) "Qualified Steam Turbine Generator Manufacturer" (QSTGM) means a manufacturer meeting requirements stipulated at 1.1.1(B).
- (iii) Wherever "Indian Manufacturing Company" is indicated, the same shall mean a Subsidiary Company or a Joint Venture Company or an Indian Steam Generator Manufacturing Company or an Indian Steam Turbine Generator Manufacturing Company registered in India under the Companies Act of India or as per the prevailing laws of India.
- (iv) Wherever the term 'coal fired' is appearing above, "coal" shall be deemed to also include bituminous coal/sub-bituminous coal/brown coal/lignite

(2) Erection/Commissioning

Where erection / supervision of erection and commissioning / supervision of commissioning has not been in the scope of the Bidder as mentioned in clause 1.1.0 & 1.2.0, it should have acted as an advisor for erection and commissioning of the Steam Generator & auxiliaries/ Steam Turbine & Generator, as the case may be. Necessary documents / certificates from the client, in support of above shall be furnished along with the techno-commercial bid.

(3) Direct / Indirect order

- i) The Bidder / Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer / Qualified Generator Manufacturer shall also be considered qualified, in case the award for the reference works (steam generator / Turbine and generator) has been received by the Bidder / Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer / Qualified Generator Manufacturer either directly from owner of plant or any other intermediary organization. A certificate from such owner of plant or the intermediary organization shall be required to be furnished by the Bidder / Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer / Qualified Generator Manufacturer along with its techno-commercial bid in support of its claim of meeting requirement stipulated at 1.1.1(A), 1.1.1(B), 1.1.4, 1.2.1 and 1.2.3 above as the case may be.
- ii) Certificate from owner of the plant shall also be furnished by the Bidder / Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer for the successful operation of the steam generator / turbine generator set as specified at 1.1.1(A), 1.1.1(B), 1.1.4, 1.2.1 and 1.2.3 above as the case may be along with the techno-commercial bid.

(4) Holding Company as a Qualified Steam Generator Manufacturer and/or Qualified Steam Turbine Generator Manufacturer

- (i) A Holding Company, singularly or collectively along with its Subsidiaries (held either directly or indirectly), meeting the requirements of clause 1.1.1(A) / 1.1.1(B) above, and also owning the technology for supercritical steam generators / supercritical steam turbine generators, shall also be considered as Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer. However, in such a case either the Indian subsidiary Company created for manufacturing of supercritical steam generator / supercritical steam turbine generators in India shall be a subsidiary of the Holding Company or the Holding Company shall maintain a minimum equity of 26% in the Joint Venture Company, created for manufacturing of supercritical steam generator / supercritical steam turbine generators in India.
- (ii) In such a case, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder for successful performance of the contract for the scope related to steam turbine generator and auxiliaries including turbine cycle, regenerative feed heating and pumping system / contract for the scope related to steam generator and auxiliaries (as the case may be) as per the format enclosed in bidding documents.
- In case of award, if the Holding Company itself is not the Bidder as a Qualified Steam Generator / Qualified Steam Turbine Generator Manufacturer, the Holding Company and all such entities lending strength / experience to the Holding Company shall each be required to furnish separate on demand bank guarantees for an amount aggregating 0.6% of the total contract price of the EPC Package divided equally among them, in addition to the contract performance security to be furnished by the Bidder. This bank guarantee requirement shall supersede bank guarantee requirement stipulated at clause 1.1.0(applicable for associate), 1.3.0, 1.4.0, 1.5.0 & 1.7.0 for the Qualified Steam Generator / Qualified Steam Turbine Generator Manufacturer.
- However, in case the Holding Company itself is the Bidder as a Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer as per clause 1.1.0, Bidder shall submit its board resolution stating that in case of any likely change of management control of any of these subsidiaries, the Bidder shall arrange for separate on demand bank guarantees from all such entities lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A) / 1.1.1(B) for an amount aggregating 0.6% of the total contract price of the EPC Package divided equally among them before the change in management control actually occurs.
- (iii) As an alternative to the requirements of Note 4(ii) above, the Holding Company, as a Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder for successful performance of the contract for the scope related to steam turbine generator and auxiliaries including turbine cycle, regenerative feed heating and pumping system / contract for the scope related to steam generator and auxiliaries (as the case may be) as per the format enclosed in bidding documents. However, the Bidder shall submit a board resolution of the Holding Company stating that in case of any likely change of management control of any of these subsidiaries, the Holding Company shall arrange for signing of DJU by all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A) / 1.1.1(B), in line with the requirements of Note 4(ii) above before the change in management control actually occurs.
- In case of award, if the Holding Company itself is not the Bidder as a Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer, the Holding Company shall be required to furnish separate on demand bank guarantee for an amount of 0.6% of the total contract price of the EPC Package, in addition to the contract performance security to be furnished by the Bidder. This bank guarantee requirement shall supersede

bank guarantee requirement stipulated at clause 1.1.0(applicable for associate), 1.3.0, 1.4.0, 1.5.0 & 1.7.0 for the Qualified steam generator / Qualified Steam Turbine Generator Manufacturer. In case of any likely change of management control of any of its subsidiaries lending strength/ experience, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A) / 1.1.1(B), in line with Note 4(ii) above before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company.

However, in case the Holding Company itself is the Bidder as a Qualified steam generator manufacturer / Qualified Steam Turbine Generator Manufacturer as per clause 1.1.0, and anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A) / 1.1.1(B), the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A) / 1.1.1(B), in line with Note 4(ii) above before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company.

(5) Steam Generator Manufacturer with Technology Tie-up for Variable Pressure Design

In case a supercritical Steam Generator manufacturer meets all the requirements as specified in clause no. 1.1.1(A) above except that the evaporator in the reference steam generator is not designed for variable pressure operation and is designed for constant pressure (Universal Pressure) operation only, in such case, the supercritical Steam Generator manufacturer shall be considered to be qualified, provided that, such supercritical Steam Generator manufacturer has an ongoing license agreement (which covers technology transfer), as on the date of techno-commercial bid opening, with the original Technology Owner (Licensor) for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges).

- i. The licensor should have experience of providing such variable pressure design steam generator technology for at least one (1) no. of pulverized coal fired supercritical steam generator for a 1500 T/hr or higher capacity using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing with the evaporator suitable for variable pressure operation in sub-critical and super-critical pressure ranges and which should be in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening.
- ii. The Bidder shall offer only the type of steam generator i.e. single pass (tower type) or two pass type for which the Bidder is qualified and shall offer only the type of water wall tubing (either spiral wound (inclined) or vertical plain or vertical rifled type) for which his licensor is qualified.
- iii. In such an event, the Bidder shall furnish a Deed of Joint Undertaking executed between the Bidder and the supercritical steam generator manufacturer (as the case may be) and its Technology Owner (Licensor), as per the format enclosed in the Bidding Documents towards the Bidder and the licensor being jointly and severally liable to the Employer for successful performance of the Steam Generator along with an extended warranty of at least one (1) year over and above what is required as per tender documents. The Deed of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected.
- iv. In case of award, Technology Owner (Licensor) will be required to furnish an on demand bank guarantee for an amount of INR 12 Million (Rupees Twelve Million) in addition to the contract performance security to be furnished by the Bidder."

(6) For clause 1.4.0

In case the Indian majority stake holder of the JV Company does not have requisite EPC experience as mentioned at clause 1.4.1 above, it may still be considered qualified if it is wholly owned by a parent company who fully meets the requisite EPC experience provided the parent company maintains its 100% equity in such wholly owned subsidiary for a lock in period of 7 years from the date of incorporation of JV company or up to the end of the defect liability period of the contract whichever is later.

In such a case, the parent company mentioned above shall necessarily be part of DJU being submitted by the Bidder.

In case of award, the parent company shall be required to furnish an on demand bank guarantee for an amount of 0.1% of total contract price of the EPC package in addition to the bank guarantee requirement indicated at clause 1.4.2 and 1.4.3.

(7) For clause 1.5.0

Majority stake in JV Company can be held either directly by the Bidder or through its wholly owned subsidiary provided the Bidder maintains its 100% equity in such wholly owned subsidiary for a lock in period of 7 years from the date of incorporation of JV company or up to the end of the defect liability period of the contract whichever is later.

In case majority stake in the JV Company is held by wholly owned subsidiary of the Bidder then such wholly owned subsidiary shall necessarily be part of DJU being submitted by the Bidder.

In case of award the wholly owned subsidiary as mentioned above shall be required to furnish an on demand bank guarantee for an amount of 0.1% of total contract price of EPC package in addition to the bank guarantee requirement at clause 1.5.2 and 1.5.3.

(8) For clause 1.1.0, 1.3.0, 1.4.0 & 1.5.0

The manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical steam generator / supercritical steam turbine generator in India of the above Indian subsidiary / JV Company. In such an event, the manufacturing company shall remain a subsidiary of the Indian subsidiary / JV company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of the manufacturing company or up to the end of the defect liability period of the contract, whichever is later.

In such a case the manufacturing company shall necessarily be part of DJU being submitted by the Bidder.

In case of award the manufacturing company shall be required to furnish an on demand bank guarantee for an amount of 0.1% of total contract price of EPC package in addition to the bank guarantee requirement at clause 1.1.3, 1.1.4, 1.3.2, 1.3.3, 1.4.2, 1.4.3, 1.5.2 and 1.5.3.

(9) Equity lock in period

Wherever equity lock in period requirement or subsidiary status requirement is indicated, the Bidder would be required to furnish along with his techno-commercial bid, a Letter of Undertaking from the promoter(s) supported by Board Resolution as per the format enclosed in the bid documents, for maintaining required minimum equity for the lock in period mentioned / maintaining the subsidiary status.

Following is also applicable for clauses 1.3.0, 1.4.0 and 1.5.0:

In case the Indian Subsidiary (ies) /JV Company (ies) (formed for manufacturing Super critical Steam Generator and/or supercritical Steam Turbine Generator sets) meets the criteria specified under Note No. 13 of "Notes for clause 1.0.0" and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0, then the bidder would have the option of submitting "Letter of Undertaking" for support from the QSGM and/or QSTGM and/or QGM, as applicable, along with the techno commercial bid as per the format enclosed in the

bidding documents instead of the undertakings / documents for maintaining the minimum equity for the lock-in period mentioned / maintaining the subsidiary status, wherever indicated, in respect of QSGM and/or QSTGM and/or QGM, as applicable.

(10) For Clause 1.2.0

“Steam Turbine Generator” indicated at clause 1.2.2 shall mean Steam Turbine, Generator and their auxiliaries as included in the DJU formats included in the bidding documents.

“Steam Generator” indicated at clause 1.2.2 shall mean Steam Generator and its auxiliaries as included in the DJU formats included in the bidding documents.

(11) For clause 1.1.0, 1.3.0, 1.4.0, 1.5.0, 1.6.0, 1.7.0

“for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating and pumping system” indicated at clause 1.1.3, 1.3.2, 1.4.2, 1.5.2, 1.6.2, 1.7.3 shall mean Steam Turbine Generator and their Auxiliaries including turbine cycle, regenerative feed heating and pumping system as included in the DJU formats included in the bidding documents.

“for the scope related to Steam Generator and Auxiliaries” indicated at clause 1.1.3, 1.3.2, 1.4.2, 1.5.2, 1.6.2, 1.7.3 shall mean Steam Generator and Auxiliaries as included in the DJU formats included in the bidding documents.

(12) For clause 1.6.0

Sourcing of the Steam generators or Steam turbine generators, either from a qualified associate or from the bidder itself meeting the requirements indicated in the applicable clauses of relevant route is acceptable.

(13) For clauses 1.1.0, 1.2.0, 1.3.0, 1.4.0, and 1.5.0

Bidders participating through any of the Routes 1.1.0 or 1.2.0 or 1.3.0 or 1.4.0 or 1.5.0 shall not be required to furnish deed of joint undertaking (DJU) and associated BG for the Steam Generator and /or Steam Turbine Generator (as the case may be), in case they meet the following criteria:

Eight (8) Nos supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be) manufactured/supplied in India by the Indian Subsidiary/JV Company / Indian manufacturing company should be in commercial operation (achieved COD) out of which four (4) such Steam Generators and/or Steam Turbine Generators (as the case may be) should have been in commercial operation for at least one year and Performance Guarantee (PG) Test should have been successfully completed in any two (2) such Steam Generators and/or Steam Turbine Generators (as the case may be) prior to the date of techno-commercial bid opening.

In case any problem related to supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be) & Auxiliaries is encountered during execution of the contract, bidder shall resolve the same within a reasonable time (in the opinion of the owner) by itself/through its collaborator/through firm having competency to resolve such issues. If the problem is not resolved within a reasonable period of time in the opinion of the owner, Owner shall have the option to approach directly to the collaborator/licensor/technology Provider or any other firm to resolve the issue. In such a case the financial expenditure(s) incurred by Owner for resolution of such issues will be to bidder's account. Accordingly, bidder shall be required to submit a letter along with the techno commercial bid valid up to the end of defect liability period of the contract, as per the format enclosed in the bidding documents.

2.0.0 Financial Criteria:

2.1.0 Financial Criteria for the Bidder

- 2.1.1 The average annual turnover of the Bidder, in the preceding three (3) financial years as on the date of techno-commercial bid opening, should not be less than **₹ 20946 Million (Indian Rupees Twenty Thousand Nine Hundred Forty Six Million only) or in equivalent foreign currency.**

In case a Bidder does not satisfy the average annual turnover criteria, stipulated above on its own, its Holding Company would be required to meet the stipulated turnover requirements as above, provided that the Net Worth of such Holding Company as on the last day of the preceding financial year is at least equal to or more than the paid-up share capital of the Holding Company. In such an event, the Bidder would be required to furnish along with its Techno-Commercial bid, a Letter of Undertaking from the Holding Company, supported by the Holding Company's Board Resolution, as per the format enclosed in the bid documents, pledging unconditional and irrevocable financial support for the execution of the Contract by the Bidder in case of award.

- 2.1.2 **Bidder should have Positive Net Worth as on the last day of the preceding financial year.**

- 2.1.3 In case the Bidder is not able to furnish its audited financial statements on standalone entity basis, the unaudited unconsolidated financial statements of the Bidder can be considered acceptable provided the Bidder furnishes the following further documents on substantiation of its qualification:

- (i) Copies of the unaudited unconsolidated financial statements of the Bidder alongwith copies of the audited consolidated financial statements of its Holding Company.
- (ii) A Certificate from the CEO/CFO of the Holding Company, as per the format enclosed in the bidding documents, stating that the unaudited unconsolidated financial statements form part of the Consolidated Annual Report of the Company.

In cases where audited results for the last financial year as on the date of Techno Commercial bid opening are not available, the financial results certified by a practicing Chartered Accountant shall be considered acceptable. In case, Bidder is not able to submit the Certificate from a practicing Chartered Accountant certifying its financial parameters, the audited results of three consecutive financial years preceding the last financial year shall be considered for evaluating the financial parameters. Further, a Certificate would be required from the CEO/CFO as per the format enclosed in the bidding documents stating that the Financial results of the Company are under audit as on the date of Techno-commercial bid opening and the Certificate from the practicing Chartered Accountant certifying the financial parameters is not available.

2.2.0 Financial Criteria for the Collaborator(s) / Associate(s)

- 2.2.1 The average annual turnover of the **Collaborator(s) / Associate(s)**, in the preceding three (3) financial years as on the date of techno-commercial bid opening, should not be less than the following for different Collaborator(s) / associate(s) as applicable.

Collaborator(s) / Associate(s)	Applicable clauses	Required annual turnover in Million INR or in equivalent foreign currency
QSGM	1.2.1, 1.6.2(a)(ii)	INR 2095 Million (Indian Rupees Two Thousand Ninety Five Million Only)
	1.1.2(c), 1.3.1(a), 1.3.1(b), 1.4.1(a), 1.4.1(b), 1.5.1(a), 1.5.1(b), 1.6.2 (a)(i)/(iii)/(iv),	INR 8141 Million (Indian Rupees Eight thousand One hundred Forty One Million only)

	1.7.2	
QSTGM	1.2.1, 1.2.3, 1.6.2(a)(ii)	INR 2095 Million (Indian Rupees Two Thousand Ninety Five Million Only)
	1.1.2(c), 1.3.1(a) , 1.3.1(b), 1.4.1(a) , 1.4.1(b), 1.5.1(a) , 1.5.1(b), 1.6.2(a)(i)/(iii)/(iv) , 1.7.2	INR 2838 Million (Indian Rupees Two thousand Eight hundred Thirty Eight Million only)
Indian Steam Generator and Steam Turbine generator manufacturer (if steam generator is being sourced as per clause 1.6.2(a)(ii))	1.6.2(a)(ii)	INR 8141 Million (Indian Rupees Eight thousand One hundred Forty One Million only)
Indian Steam Generator and Steam Turbine generator manufacturer (if steam turbine generator is being sourced as per clause 1.6.2(a)(ii))	1.6.2(a)(ii)	INR 2838 Million (Indian Rupees Two thousand Eight hundred Thirty Eight Million only)
Subsidiary Company / JV Company of QSGM	1.1.2(c), 1.3.1(b), 1.4.1(b), 1.5.1(b), 1.6.2(a) (i)/(iii)/(iv) , 1.7.2	INR 8141 Million (Indian Rupees Eight thousand One hundred Forty One Million only)
Subsidiary Company / JV Company of QSTGM	1.1.2(c), 1.3.1(b), 1.4.1(b), 1.5.1(b), 1.6.2(a) (i)/(iii)/(iv) , 1.7.2	INR 2838 Million (Indian Rupees Two thousand Eight hundred Thirty Eight Million only)
Separate Generator Manufacturer	1.1.4, 1.2.3, 1.3.3, 1.4.3, 1.5.3, 1.6.4 , 1.7.4	INR 2095 Million (Indian Rupees Two Thousand Ninety Five Million Only)

Holding Company as QSGM	Notes for clause 1.0.0 (4)	INR 8141 Million (Indian Rupees Eight thousand One hundred Forty One Million only)
Holding Company as QSTGM	Notes for clause 1.0.0 (4)	INR 2838 Million (Indian Rupees Two thousand Eight hundred Thirty Eight Million only)
Technology Owner (Licensor to QSGM)	Notes for clause 1.0.0 (5)	INR 2095 Million (Indian Rupees Two Thousand Ninety Five Million Only)

In case the Collaborator/Associate does not satisfy the average annual turnover criteria above on its own, its Holding Company would be required to meet the stipulated turnover requirements at Cl. 2.2.1 above, provided that the net worth of such Holding Company, as on the last day of the preceding financial year is at least equal to or more than the paid-up share capital of the Holding Company. In such an event, the Collaborator/Associate would be required to furnish along with bidder's Techno-Commercial bid, a Letter of Undertaking from the Holding Company, supported by Board Resolution of the Holding Company, as per the format enclosed with the bidding documents, pledging unconditional and irrevocable financial support to the Collaborator/Associate to honour the terms and conditions of the Deed of Joint Undertaking in case of award of the Contract to the Bidder with whom Collaborator/Associate is associated.

2.2.2 Each Collaborator/Associate should have Positive Net Worth as on the last day of the preceding financial year.

2.2.3 In case the Collaborator(s) / Associate(s) is not able to furnish its audited financial statements on stand-alone entity basis, the unaudited unconsolidated financial statements of the Collaborator(s) / Associate(s) can be considered acceptable provided the Collaborator(s) / Associate(s) furnishes the following further documents on substantiation of its qualification:

- (i) Copies of the unaudited unconsolidated financial statements of the Collaborator(s) / Associate(s) along with copies of the audited consolidated financial statements of the Holding Company of Collaborator(s) / Associate(s).
- (ii) A Certificate from the CEO/CFO of the Holding Company, as per the format enclosed with the bidding documents, stating that the unaudited unconsolidated financial statements form part of the consolidated financial statements of the Holding Company of Collaborator/Associate.

In cases where audited results for the last financial year as on the date of Techno Commercial bid opening are not available, the financial results certified by a practicing Chartered Accountant shall be considered acceptable. In case, Collaborator/Associate is not able to submit the Certificate from a practicing Chartered Accountant certifying its financial parameters, the audited results of three consecutive financial years preceding the last financial year shall be considered for evaluating the financial parameters. Further, a Certificate would be required from the CEO/CFO as per the format enclosed in the bidding documents stating that the Financial results of the Company are under audit as on the date of Techno-commercial bid opening and the Certificate from the practicing Chartered Accountant certifying the financial parameters is not available.

NOTES:

- (i) Net worth means the sum total of the paid up share capital and free reserves. Free reserve means all reserves credited out of the profits and share premium account but does not include reserves credited out of the revaluation of the assets, write back of depreciation provision and amalgamation. Further any debit balance of Profit and Loss account and miscellaneous expenses to the extent not adjusted or written off, if any, shall be reduced from reserves and surplus.
- (ii) Other income shall not be considered for arriving at annual turnover.
- (iii) "Holding Company" and "Subsidiary Company" shall have the meaning ascribed to them as per Companies Act of India.
- (iv) For annual Turnover indicated in foreign currency, the exchange rate as on seven (7) days prior to the date of Techno-Commercial bid opening shall be used.
- (v) In case the bidder / collaborator(s) / associate(s) participating under Clause 1.3.0 or 1.4.0, do not meet the turnover requirement, then, the Turnover of any of the Promoters individually or all the promoters (in a combined manner) (each having Equity Stake more than 25%) of the Subsidiary Company / JV Company would be considered. Each such promoter of the Subsidiary Company / JV Company shall have to meet the Net Worth criteria individually as per clause 2.1.2 and/or 2.2.2. In such an event the Bidder would be required to furnish along with its techno-commercial bid, a Letter of Undertaking from such promoter(s), supported by Board Resolution as per the format enclosed in the bidding documents, pledging unconditional and irrevocable financial support for execution of the Contract by the Bidder in case of award.

3.0.0 Phased Manufacturing Program and Transfer of Technology

- 3.1.0 The Bidder and its associate shall give firm commitment (for their respective equipment) in the form of an undertaking supported by board resolution to set up / augment the existing manufacturing facility for supercritical Steam Generator and Steam Turbine Generator sets in India either by itself or through its subsidiaries or through Joint Venture (JV) in India in a phased manner as per Phased Manufacturing Program elaborated in the bidding documents.

The manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical Steam Generators / supercritical steam turbine generators in India of the above Indian subsidiary / JV Company. In such an event, the manufacturing company shall remain a subsidiary of the Indian subsidiary / JV company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of the manufacturing company or up to the end of the defect liability period of the contract, whichever is later.

In case of award the Bidder shall submit an on demand bank guarantee of INR 650 Millions for Steam Turbine Generators and INR 900 Million for Steam Generators as security for any default against meeting the specified Phased Manufacturing Program.

- 3.2.0 Valid technology transfer agreements including license to manufacture and supply in India, separately for steam generator sets and steam turbine generator sets, between the Qualified Steam Generator Manufacturer / Qualified Steam Turbine Generator Manufacturer or their technology provider (if any) and the Indian Manufacturing Company should be in place on the date of techno-commercial bid opening covering the type, size and rating of the Steam Generators / Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The signatory of the technology transfer agreement with the Indian Manufacturing Company should either own the technology or should have authorization to use and further license the technology.

Documentary evidence to this effect shall be furnished along with the techno-commercial bid. The technology transfer agreement shall necessarily cover transfer of technological know-how for super critical Steam Generator / supercritical Steam Turbine Generator in the form of complete transfer of design dossier, design softwares, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Such technology transfer agreement must have provision that the transfer of technology to the Indian Manufacturing Company shall be completed by the time last 800 MW supercritical unit is supplied by the Bidder under this tender.

- 3.3.0 Major part (minimum 75%) of the land required for setting up manufacturing facility in India should be in possession with clear title either in the name of the "Indian Manufacturing Company(ies)" or its Indian promoter (but pledged / leased to the Subsidiary / JV company) prior to submission of techno-commercial bid. In case, the Bidder has existing manufacturing facility in India, he should have in possession major part (minimum 75%) of the additional land required with clear title for augmenting his already existing manufacturing facility. "Clear title" shall be deemed to also include land acquired on long term lease basis for minimum 30 years with a provision for further extension.
- 3.4.0 Promoters of the Subsidiary (ies) / JV Company (ies) will be required to either employ a minimum subscribed and paid up share capital or have net worth of INR 500 million in the respective Subsidiary / JV Company prior to the submission of techno-commercial bid. In case the Bidder is selected for award of the contract, either a minimum subscribed and paid up share capital or net worth of INR 1000 million in the respective Subsidiary / JV Company will have to be ensured by the promoters prior to the date of award. In the event the Bidder fails to meet this requirement, the Employer shall disqualify such Bidder. The certificates from a practicing Chartered Accountant shall be submitted by the Bidder certifying the amount of subscribed and paid up share capital, or net worth as the case may be as on a date not earlier than 15 days from the date of techno-commercial bid opening / award date as applicable.
- 3.5.0 The Bidder and its associate shall be required to furnish an undertaking (for their respective equipment) with regard to above as per format enclosed with the bidding documents.

Note to clause 3.0.0

(1) Among the bidder and its associate(s) who has already given commitments for PMP and submitted bank guarantees for security for default against specified PMP for steam Turbine Generators / Steam Generator to any Central / State sector power generating Company for supercritical projects **or if such bank guarantees have already been released** shall not be required to furnish further bank guarantees for security for default against specified PMP.

(2) In case the Indian Subsidiary Company/JV Company/Indian manufacturing company have already completed PMP, for supercritical boiler/supercritical steam turbine (as the case may be) then such Indian Subsidiary Company/JV Company/Indian manufacturing company need not submit the undertakings/documents for PMP again for the respective equipment. However, certificate in support of completion of such PMP duly issued by the competent authority **or proof of release of the bank guarantee by any Central / State power generating company** shall be submitted along with the techno-commercial bid.

4.0.0 Project Management Experience

- 4.1.0 (a) The Bidder should have executed in the last 10 years industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10000 million or more. At least one of such projects should have a contract value of INR

4000 million or more. These projects shall be in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening.

OR

4.1.0(b) The Bidder should have executed at least one (1) no of pulverized coal / lignite fired reheat type of unit of at least 200 MW which is in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening. The scope of work of such reference plant should have necessarily included engineering management, procurement management, construction management, and commissioning/ supervision of commissioning of steam generator and steam turbine generator sets with their associated auxiliaries, Electro static precipitators/ bag filters, Switchyard, Coal handling plant, Ash handling plant, Cooling Towers, Condenser cooling water system for carrying out project management. Otherwise the Bidder shall associate with a Project Management Organization who meets the above requirement for project management.

If the project management of the EPC package is to be carried out by a Project Management Organization other than the Bidder itself then, the Bidder shall furnish undertaking jointly executed by it and Project Management Organization in which all the executants of DJU shall be jointly and severally liable to the Employer to perform successfully all the project management activities included in his scope as per format enclosed in the bidding documents. The Deed of Joint Undertaking shall be submitted along with Techno-Commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. In case of award, the Project Management Organization will be required to furnish an on demand bank guarantee for INR 20 Million (Rupees twenty Million) in addition to the contract performance security by the Bidder.

5.0.0 Engineering Experience

The Bidder should carryout Engineering of the complete EPC package either by itself or through an Architect Engineering firm meeting either the requirements indicated at 5.1.0 or 5.2.0 or 5.3.0 below:

5.1.0(a) (i) The Bidder should have carried out Engineering of at least one (1) no. of pulverized coal/ lignite fired reheat type supercritical unit, with minimum unit rating of 500 MW, consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, steam Generator start up system, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

And

5.1.0 (a) (ii) The Bidder should have carried out Engineering of at least one (1) no. of pulverized coal / lignite fired reheat type unit, with minimum unit rating of 200 MW consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, regenerative heating and pumping system , Power cycle piping and flash tanks/ flash boxes, Coal handling plant, Ash handling plant, Condenser cooling water system, Switchyard, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

5.1.0 (b) If the Bidder does not meet the requirement indicated at 5.1.0 (a)(i) but meets the requirement indicated at 5.1.0 (a)(ii) then the Bidder shall get the engineering documents related to Thermal cycle, Power Cycle piping and flash tanks/ flash boxes, Steam Generator start up system, Sizing of Main Plant equipments, interface between SG and TG, unit start up and control philosophy vetted by an Architect Engineering Firm who meets the requirement indicated at 5.1.0 (a) (i). In such a case the Bidder shall furnish an Undertaking Jointly executed by it and the architect engineering firm, meeting the requirement indicated at 5.1.0(a) (i) in which all the executants of DJU shall be jointly and severally liable to the Employer to perform successfully all the engineering activities included in the scope of the

architect engineering firm as per format enclosed in the bidding documents. The Deed of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. In case of award, the architect engineering firm will be required to furnish an on demand bank guarantee for INR 1.5 Million (Rupees One and Half Million) in addition to the contract performance security to be furnished by the Bidder.

- 5.2.0(a)(i) The steam generator and/or steam turbine generator manufacturer bidding under route 1.1.0 or 1.2.0 should be engaged in or should have completed Engineering of at least one (1) no. of pulverized coal/ lignite fired reheat type supercritical unit, with minimum unit rating of 500 MW, consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, steam Generator start up system, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes (in a single contract or in two separate contracts in a single unit), which is under execution prior to the date of Techno-Commercial bid opening.

And

- 5.2.0(a)(ii) The steam generator and/or steam turbine generator manufacturer bidding under route 1.1.0 or 1.2.0 should have carried out Engineering of at least one (1) no. of pulverized coal / lignite fired reheat type unit, with minimum unit rating of 500 MW consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes, Coal handling plant, Ash handling plant, Condenser cooling water system, Switchyard, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

- 5.3.0(a) If the Bidder does not meet either the requirements indicated at 5.1.0 (a)(i) & (ii) or the requirements indicated at 5.2.0(a)(i) & (ii) then, the Bidder shall get the complete engineering of the EPC package done by an Architect Engineering firm who meets the requirements indicated at 5.1.0 (a) (i) & (ii). In such a case the Bidder shall furnish undertaking jointly executed by it and the Architect Engineering Firm in which all the executants of DJU shall be jointly and severally liable to the Employer to perform successfully all the engineering activities included in its scope as per format enclosed in the bidding documents. The Deed of Joint Undertaking shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. In case of award, architect engineering firm will be required to furnish an on demand bank guarantee for INR 1.5 Million (Rupees One and Half Million) in addition to the contract performance security to be furnished by the Bidder.

- 5.3.0(b) As an alternate to 5.3.0(a) the Bidder shall get the engineering of the Main Plant equipment / systems i.e. steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, steam Generator start up system, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes and interface between Boiler and Turbine, done by an Architect Engineering firm who meets the requirements indicated at 5.1.0 (a) (i) and the Bidder shall get the engineering of Balance of Plant including interface between Main Plant and Balance of Plant done by another architect engineering firm who meets the requirements indicated at 5.1.0(a)(ii). In such a case the Bidder shall furnish two separate Deed of Joint Undertakings (i) Jointly executed by it and the architect engineering firm for Main Plant Equipment / systems in which all the executants of DJU shall be jointly and severally liable to the Employer to perform successfully all the engineering activities of Main Plant equipment / system included in the scope of the architect engineering firm as per format enclosed in the bidding documents. (ii) Jointly executed by it and the architect engineering firm for Balance of Plant in which all the executants of DJU shall be jointly and severally liable to the Employer to perform successfully all the engineering activities of Balance of Plant including interface between Main Plant and Balance of Plant included in the scope of the architect engineering firm as per format enclosed in the bidding documents. The Deed of Joint Undertakings shall be

submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and its bid shall be rejected. In case of award, architect engineering firm for Main Plant equipment / system and for Balance of Plant will each be required to furnish an on demand bank guarantee for INR 1.5 Million (Rupees One and Half Million) in addition to the contract performance security to be furnished by the Bidder.

Note

- 1.0 The term 'Engineering' in clause 5.0.0, shall mean (a) Basic engineering for integration and interface between SG & TG. (b) Pre award engineering for system associated with BTG & BOP, (c) Post award engineering covering review of thermal cycle of the power plant, review and interface engineering for over all integration of various power plant equipment / packages including review of major design documentation such as design/ sizing calculations, layout, plant start up and control philosophy and schematic drawings and other documentation related to Mechanical, Civil, Electrical and C & I design.
- 2.0 For compliance of requirement stipulated in clause 5.1.0 (a) (i) & (ii) or 5.2.0(a) (i) & (ii) above, Bidder/ Architectural engineering firm can either use two different reference power plants or single reference power plant.

Work Schedule for Koderma TPS Phase-II (2X800 MW)

Suggestive Milestone Schedule for Koderma TPS Phase-II (2X800 MW)

The EPC contractor shall have the overall responsibility for readiness of sub-systems, achievement of critical milestones and commissioning of BoP systems to meet the unit wise milestones and commissioning schedules and shall submit detailed work program in the bid inter-alia taking into consideration the milestones to be considered for progressive payment.

As site levelling, Infrastructures like construction power, construction offices, Construction store, steel yard etc (as specified in the scope) and SG/TG/Chimney civil works etc are included in the scope of EPC contract. This is assumed that the prospective bidders will be required to tie up with sub agency/sources during bidding stage, so that the award for such work is finalized/placed in the 1st month on award of EPC contract.

The following schedule is suggested for award of various major BoP packages by the successful contractor (Qualified bidder may club or split the packages as per their packaging philosophy, however availability of contract for the identified work to be ensured as indicated below).

Suggestive Schedule for award of BoPs:

Sl. No.	Milestones	Schedule (Month from EPC Package award)
1.	Construction Power package including Construction Lighting in plant, Construction Water, Steel Yard, Survey etc.	01
2.	Site Levelling	01
3.	SG Area and Offsite area Civil Works & TG and Main Powerhouse Civil Works	01
4.	Switchyard	02
5.	Chimney Civil Work	03
6.	Electrostatic Precipitators	03
7.	Pre-Treatment Plant	03
8.	DM Plant and Chemical Treatment Plant	03
9.	Coal Handling Plant	03
10.	FGD	03
11.	CW System Civil works	04
12.	CW System Equipment	04
13.	Induced Draft Cooling Towers	04
14.	Ash Handling System	04
15.	Fire Detection & Protection System, Fire tender and Fire Station Equipment	05
16.	Station Piping	05
17.	Air Conditioning System & Ventilation System	05

18.	Station Control & Instrumentation (C&I)	05
19.	Electrical system associated with package and Instrumentation Cables	06
20.	Other specified BoP Packages (In the scope of EPC Contract)	06-08

It is expected that the prospective bidders shall mobilize & maintain sufficient number with adequate capacity DG sets at his own cost for providing necessary power requirement till readiness of permanent construction power system, which is in the scope of the EPC Contractor.

Suggestive Milestone Schedule for Site Levelling and Basic Infrastructure:

Sl. No.	Milestones	Schedule (Month from EPC NOA)
1.	Mobilisation of site levelling agency at site and commencement of site levelling works including dismantling activities	02
2.	Completion of Site Levelling & Handing over of Main Plant (Boiler, Main Powerhouse, ESP, and Chimney)	Progressively from 03 to 06 months from NOA
3.	Readiness of Priority Roads* including Drains	Progressively from 06 to 10 months
4.	Readiness of External Drain for evacuation of plant area drainage	10
5	Construction & commissioning of sub-station, ring main etc and readiness of complete construction power system	Progressively by 08th month
6.	Readiness of area lighting in Plant	Progressively from site mobilization to 8 th months from NOA
7.	Readiness of Site office of EPC agency	02
8.	Establishment of Safety Control Room & Site office of DVC (As per spec)	Progressively from 03 to 06 months from NOA
9.	Readiness of Storage and Preassembly yard (as per spec) Hard Crusting, Roads & Drains etc. as per priority requirement of the project	Progressively from 03 rd to 12 th month from NOA. 1st phase development of Storage and Laydown area with following activities by 6th Month from NOA. 50000 sq mtr. hard crusting with roads and drains, at least 2 storage sheds, Store office with Material persons.

10.	Establishment of workers habitat (as per spec) in phased manner For 500 workers in Phase 1 For additional 1000 workers in Phase 2 For additional 1000 workers in Phase 3 For additional 1500 workers in Phase 4	Phase 1 by 3rd Month (For dismantling, site levelling and civil work) Phase 2 by 8th Month Phase 3 by 14th Month Phase 4 by 20th Month

* Rigid pavements Roads in Plant area and all other roads as shown in General Layout plan (GLP) / Road layout tender drawing including approach road / heavy duty paving/heavy duty passage to buildings/ facilities in the package, including construction of priority roads at onset of project works and maintenance of the roads during the entire construction period.

Milestone for Civil Works of SG, TG and Offsite area: The EPC contractor shall ensure the completion of various equipment foundations, structures, buildings and facilities etc. to achieve the milestones for SG & Auxiliaries, TG & Auxiliaries and Balance of Plants as per the schedules specified in the various Milestone schedules.

Civil Packages: The prospective bidders have to ensure timely award of the Civil works packages, suitable mobilization at site and work progress in such a manner that civil inputs are ready for commencement of works as specified in the work schedule of Main Plant(SG & TG) and other BoP packages. The bidders must submit a detailed work schedule in their bids capturing the readiness of civil inputs/foundation for all majors works and also deployment plan(timelines) for major T&Ps under the scope of EPC contract. The same shall be discussed along with suggestive list of major T&Ps during finalization of L2 schedule.

Suggestive Milestones Schedule for Steam Generator & Auxiliaries:

Sl. No.	Milestones	Schedule (Month from NOA)	
		Start	Finish
1.	Basic Engineering	01	05
2.	Detailed Engineering	03	17
3.	Commencement of Manufacturing	06	-
4.	Ordering of Major BOIs (Bought out items)	06	12
5.	Completion of Ordering of Balance BOIs (Bought out items)	-	18
6.	Establishment of Storage & Pre-assembly Yard	04	08
7.	Supply of foundation materials for Boiler and Bunker Structures	-	08
8.	Commencement of supplies of Structures & Main Equipment	09	-
9.	Start of Boiler erection	12	-

10.	Supply of Critical Piping	18	30
11.	Pre-Assembly / Erection of critical piping	20	36
12.	Supply of Coal Mills	18	30
13.	Supply of ID/ FD/ PA Fans	20	32
14.	Boiler Hydraulic Test	-	34
15.	Completion of Major Supplies	-	35
16.	Completion of all Supplies	-	37
17.	Completion of Site delivery of all Mandatory Spares	-	39
18.	Readiness of C&I for Boiler light up	-	38
19.	Chemical Cleaning completion & Boiler light up	-	40
20.	Erection of Mill and Bunker Structures including Coal Bunkers	18	36
21.	Completion of erection of Tripper Floors and Boiler area TPs.	-	37
22.	Erection & Commissioning of Milling system for Coal Firing	22	40
23.	Completion of Ducting, Insulations etc for Coal Firing	-	40
24.	Steam Blowing Completion	-	42
25.	Unit Synchronization on Coal	-	44
26.	Full Load Operation	-	45
27.	Trial operation including 72 hours Full Load Operation	-	46
28.	Completion of facilities	-	48

Note:

- The above schedule is for 1st Unit only. The phase gap between various activities of 2nd Unit shall be 4 (Four) Months, except for engineering activities which shall remain same for both units.
- Completion of supplies required for milestone achievement such as Boiler Hydro Test, Boiler Light Up and Synchronization to be ensured 03 months prior to each milestone.
- The term "Supply" denotes receipt of material at site, for scheduling purpose receipt at site shall be taken as up to 2 weeks for inland supply and up to 4 weeks for Offshore supplies from dispatch.

- Bidder shall submit detailed **construction methodology and erection strategy** in the form of Construction Manual along with the bid. To ensure maintaining the phase gap between erection & commissioning of two units as 04 (four) months, unit-wise erection agency deployment shall be discussed during the post-bid discussion. The erection strategy shall also include **unit-wise deployment schedule and utilization of major Tools & Plants (T&Ps)**. Based on the proposed erection strategy of the Bidder, the details of T&Ps and their deployment schedule shall be finalized during L2 schedule finalization with DVC. However, EPC contractor will have to ensure the deployment of T&Ps as per actual requirement at site to meet the project milestones.
- The EPC contractor shall ensure **establishment of storage and preassembly yard** area as per the schedule indicated above. The area will be hard crusted along with drainage system and with provision of gantry cranes, welding machines etc. and approach road to main plant from at least two sides. Further, the area shall be barricaded with watch cabins at gates / yard management for proper record of material entry and exit.
- The bidder shall deploy **01 No. Rack & Pinion construction lift** in each boiler before commencement of pressure parts erection.
- The bidder must ensure **Permanent lift, One in Boiler and One in TG prior to Boiler Light up of respective unit.**

Suggestive Milestones Schedule for Steam Turbine Generator & Auxiliaries:

Sl. No.	Milestones	Schedule (Month from NOA)	
		Start	Finish
1.	Basic Engineering	01	05
2.	Detailed Engineering	03	17
3.	Commencement of Manufacturing	06	-
4.	Supply of CW Puddle Flange	-	12
5.	Supply of TG embedment	-	15
6.	Completion of Ordering of Major BOIs (Bought out items)	-	12
7.	Completion of Ordering Balance BOI (Bought out items)	-	18
8.	Establishment of Storage facilities, Lay down area etc	06	12
9.	Supply of EOT Crane	-	19

10.	Supply of Condenser, Major Supplies of TG & auxiliaries	17	32
11.	Erection and commissioning of EOT crane	21	23
12.	Start of Condenser Erection	24	-
13.	Start of TG Erection	26	-
14.	Supply of Power Cycle Piping	24	32
15.	Pre-assembly & Erection of Power Cycle Piping	26	38
16.	Completion of Balance Supplies	-	34
17.	Completion of site delivery of all Mandatory spares	-	36
18.	TG Box up		36
19.	Completion of TG Oil Flushing		38
20.	TG on Barring Gear		40
21.	Unit Synchronization	-	44
22.	Full Load Operation	-	45
23.	Trial operation including 72 hours Full Load Operation	-	46
24.	Completion of facilities	-	48

Note:

- The above schedule is for 1st Unit only. The phase gap between various activities of 2nd Unit shall be 4 (Four) months except for engineering activities which shall remain same for both units.
- The term “Supply” denotes receipt of material at site, for scheduling purpose receipt at site shall be taken as up to 2 weeks for inland supply and up to 4 weeks for Offshore supplies from dispatch.
- Bidder shall submit detailed construction methodology and erection strategy in the form of Construction Manual along with the bid. To ensure maintaining the phase gap between erection & commissioning of two units as 04 (four) months, unit-wise erection agency deployment shall be discussed during the post-bid discussion. The erection strategy shall also include unit-wise deployment schedule and utilization of major Tools & Plants (T&Ps). Based on the proposed erection strategy of the Bidder, the details of T&Ps and their deployment schedule shall be finalized during L2 schedule finalization with DVC. However, EPC contractor will have to ensure the deployment of T&Ps as per actual requirement at site to meet the project milestones.

Suggestive Milestone Schedule for PT Plant:

Sl. No.	Milestones	Schedule (Month from EPC NOA)
1.	Commissioning of clarifier along with Chlorination and Filter water system to feed the DM Plant	30
2.	Commissioning of Potable Water System	32
3.	Commissioning of 1st CW Clarifier, clarified water pumps and associated System to feed clarified water to CW system	34
4.	Commissioning of 2nd Clarifier for CW System	36
5.	Commissioning of Chlorination Plant for CW system	36
6.	Commissioning of Service water system	34
7.	Commissioning of liquid effluent treatment system including effluent discharge line	40
8.	Completion of facilities including trial operation of total system	42

Suggestive Milestone Schedule for DM Plant:

Sl. No.	Milestones	Schedule (Month from EPC NOA)
1.	Completion of DM Plant 1 st Stream along with associated systems and charging of DM Fill System	32
2.	Completion of DM Plant (Balance streams)	34
3.	Completion of CW Treatment system	38
4.	Completion of facilities including trial operation of total system.	42

Suggestive Milestone Schedule for Coal Handling Plant:

Sl. No.	Milestones	Schedule (Month from EPC NOA)
1.	Commissioning of Stacker Reclaimer & Crusher House for coal feeding	38
2.	Commissioning of Coal Handling system including Coal Transportation system for achieving Coal Firing of 1 st Unit	40
3.	Completion of facilities of Coal Handling system for 1 st Unit	44

Note:

- The above milestones are for 1st Unit and common facilities. The respective milestones for 2nd Unit shall have phase gap of 4 (Four) Months each w.r.t. 1st Unit except Engineering.

Suggestive Milestone Schedule for Ash Handling Plant:

Sl. No.	Milestones	Schedule (Month from EPC NOA)
1.	Readiness of Bottom Ash Handling system including Ash Transportation system up to the terminal point (as per specifications) for BLU for 1 st Unit	38
2.	Readiness of Fly Ash system Handling system for 1 st Unit	40
3.	Completion of facilities for 1 st Unit	44

Note:

- The above milestones are for 1st Unit and common facilities. The respective milestones for 2nd Unit shall have phase gap of 4 (Four) Months each w.r.t. 1st Unit except Engineering.

Suggestive Milestone Schedule for FGD:

Sl. No.	Milestones	Schedule (Month from EPC NOA)
1.	Readiness of FGD system for Coal firing of 1 st Unit	40
2.	Commissioning of FGD system including Gas-in for 1 st Unit	42
3.	Completion of facilities for 1 st Unit	44

Note:

- The above milestones are for 1st Unit and common facilities. The respective milestones for 2nd Unit shall have phase gap of 4 (Four) Months each w.r.t. 1st Unit except Engineering.

Milestone Schedule for Switchyard, Station C&I and Electrical Systems:

EPC contractor shall be responsible for readiness of power supply required for achieving the Boiler Hydro Test (drainable) of 1st Unit. If the Bidder feels necessary, the power requirement can be planned from the nearby construction power source or available local system. The bidder shall submit the scheme for the same in the bid.

Suggestive Milestone Schedule for Switchyard:

Sl. No.	Milestones	Schedule (Month from EPC NOA)
1.	Construction & commissioning of sub-station, ring main etc and readiness of complete construction power system	Progressively by 08th month
2.	Readiness of Priority bays for charging for Start-up Power for Unit # 1	30
3.	Readiness of line bays, Generator Transformer Bay for Unit # 1, Coupler Bays, Transfer Bays etc. with Common Facilities like Control Rooms, Bay Facilities required for Commissioning and Operation of switchyard	40
4.	Balance Completion of facilities for 1st Unit # 1	42

Note:

- The above milestones are for 1st Unit and common facilities. The respective milestones for 2nd Unit shall have phase gap of 4 (Four) Months each w.r.t. 1st Unit except Engineering.

Suggestive Milestone Schedule for Station C&I:

Sl. No.	Milestones	Schedule (Month from EPC NOA)
1.	Readiness of DDCMIS for Water System for 1 st Unit	30
2.	Readiness of DDCMIS Systems required for Boiler Light Up of 1 st Unit	38
3.	Readiness of DDCMIS For Main Plant & Standalone Common System for 1 st Unit	40
4.	Readiness of DDCMIS for AHP & CHP and other balance works for 1 st Unit	42
5.	Completion of facilities for C&I System of 1 st Unit	44

Note:

- The above milestones are for 1st Unit and common facilities. The respective milestones for 2nd Unit shall have phase gap of 4 (Four) Months each w.r.t. 1st Unit except Engineering.

Electrical Auxiliary System: The bidder shall furnish detailed work program including important milestones like NIT, OBD, Award, Mobilization and commencement of work and readiness of systems for EHV transformers, Aux. transformers, Indoor Transformers, Generator and MV Bus Duct, HT and LT Switchgear, Cabling, Station Lighting, DC system, DG sets etc. (Covered in scope of EPC work). Further the readiness of each system shall be linked with unit-wise readiness of drives / systems

required for Start-up Power, Boiler Hydro Test, Boiler Light up, Unit Synchronization and Commissioning etc. Detailed program submitted by the bidder shall be discussed and finalized with L2 schedule finalization.

Other BoP systems like Cooling Towers, Cooling Water (CW) System, Station Piping, Air Conditioning, Ventilation system, Compressed air system, Fire Detection & Protection System including Solar panel installation on Roof of various buildings in Plant area, Biomass handling plant etc. as per scope of EPC work: The bidder shall furnish detailed work program including important milestones like NIT, OBD, Award, Mobilization & commencement of work, intermediate milestones and completion program etc. linking with major project milestones i.e. Boiler Hydro Test, Boiler Light up, TG deck floating, TG barring gear, Steam Blowing, Unit Synchronization and Commissioning (Full load) requirements etc. Detailed program submitted by the bidder shall be discussed and finalized during with L2 schedule finalization.

**LIST OF BANKS ACCEPTABLE FOR SUBMISSION
OF BANK GUARANTEE FOR ADVANCE PAYMENTS, PERFORMANCE SECURITIES AND
SECURITIES FOR DEED OF JOINT UNDERTAKING**

LIST OF COMMERCIAL BANKS AS PER RBI (SOURCE RBI WEBSITE DT. 08-06-2012)

A. List of Scheduled Public Sector Banks:

1. State Bank of India
2. Bank of Baroda (Including Vijaya Bank and Dena Bank)
3. Bank of India
4. Bank of Maharashtra
5. Canara Bank (Including Syndicate Bank)
6. Central Bank of India
7. Indian Bank (Including Allahabad Bank)
8. Indian Overseas Bank
9. Punjab National Bank (including Oriental Bank of Commerce and United Bank of India)
10. Punjab & Sind Bank
11. Union Bank of India (including Andhra Bank and Corporation Bank)
12. UCO Bank

B. List of Scheduled Private Sector Banks

1. Axis Bank Ltd.
2. Bandhan Bank Ltd.
3. CSB Bank Ltd.
4. City Union Bank Ltd.
5. DCB Bank Ltd.
6. Dhanlaxmi Bank Ltd.
7. Federal Bank Ltd.
8. HDFC Bank Ltd
9. ICICI Bank Ltd.
10. IndusInd Bank Ltd
11. IDFC First Bank Ltd.
12. Jammu & Kashmir Bank Ltd.
13. Karnataka Bank Ltd.
14. Karur Vysya Bank Ltd.
15. Kotak Mahindra Bank Ltd
16. Lakshmi Vilas Bank Ltd.
17. Nainital Bank Ltd.
18. RBL Bank Ltd.
19. South Indian Bank Ltd.
20. Tamilnad Mercantile Bank Ltd.
21. YES Bank Ltd.
22. IDBI Bank Ltd.

C. List of Scheduled Small Finance Banks

1. Au Small Finance Bank Limited
2. Capital Small Finance Bank Limited
3. Equitas Small Finance Bank Limited

4. Suryoday Small Finance Bank Limited
5. Ujjivan Small Finance Bank Limited
6. Utkarsh Small Finance Bank Limited
7. ESAF Small Finance Bank Limited
8. Fincare Small Finance Bank Limited
9. Jana Small Finance Bank Limited
10. North East Small Finance Bank Limited
11. Shivalik Small Finance Bank

D. Limited List of Scheduled Payments Banks

1. India Post Payments Bank Limited
2. Fino Payments Bank Limited
3. Paytm Payments Bank Limited

F. List of Scheduled Foreign Banks in India

1. Australia and New Zealand Banking Group Ltd.
2. Westpac Banking Corporation
3. Bank of Bahrain & Kuwait BSC
4. AB Bank Ltd.
5. Sonali Bank Ltd.
6. Bank of Nova Scotia
7. Industrial & Commercial Bank of China Ltd.
8. BNP Paribas
9. Credit Agricole Corporate & Investment Bank
10. Societe Generale
11. Deutsche Bank
12. HSBC Ltd
13. PT Bank Maybank Indonesia TBK
14. Mizuho Bank Ltd.
15. Sumitomo Mitsui Banking Corporation
16. MUFG Bank, Ltd.
17. Cooperatieve Rabobank U.A.
18. Doha Bank
19. Qatar National Bank
20. JSC VTB Bank
21. Sberbank
22. United Overseas Bank Ltd
23. FirstRand Bank Ltd
24. Shinhan Bank
25. Woori Bank
26. KEB Hana Bank
27. Industrial Bank of Korea
28. Kookmin Bank
29. Bank of Ceylon
30. Credit Suisse A.G
31. CTBC Bank Co., Ltd.
32. Krung Thai Bank Public Co. Ltd.
33. Abu Dhabi Commercial Bank Ltd.
34. Mashreq Bank PSC

35. First Abu Dhabi Bank PJSC
36. Emirates Bank NBD
37. Barclays Bank Plc.
38. Standard Chartered Bank
39. NatWest Markets Plc
40. American Express Banking Corporation
41. Bank of America
42. Citibank N.A.
43. J.P. Morgan Chase Bank N.A.
44. SBM Bank (India) Limited*
45. DBS Bank India Limited*
46. Bank of China Ltd.

[* Note: SBM Bank (India) Limited (Subsidiary of SBM Group) and DBS Bank India Limited (Subsidiary of DBS Bank Ltd.) have been issued licence on December 06, 2017 and October 04, 2018 respectively for carrying on banking business in India through Wholly Owned Subsidiary (WOS) mode. They have commenced operations as WOS with effect from December 01, 2018 and March 01, 2019.]

ANNEXURE-IV to BDS

Sub: Preference to Make In India and Eligibility for Participation/ granting of Purchase Preference to Class-I local suppliers- regarding

It is the policy of the Government of India to encourage 'Make in India' and promote manufacturing and production of Goods and Services in India with a view to enhancing income and employment. In this regard, the following guidelines, concerning the procedure to be adopted for granting Eligibility for Participation/purchase preference to local suppliers, are hereby issued:

1.0 Definitions:

- a) **'Local content'** means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the goods, services or works procured (excluding net domestic indirect taxes) minus the value of imported content in the goods, services or works (including all customs duties) as a proportion of the total value, in percent.
- b) **'Class-I local supplier'** means a supplier or service provider, whose goods, services or works offered for procurement, meets the minimum local content as prescribed.
'Class-II local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, meets the minimum local content as prescribed for 'Class-II local supplier' but less than that prescribed for 'Class-I local supplier'.
'Non-Local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content less than that prescribed for 'Class-II local supplier'.
- c) **'L1'** means the lowest tender or lowest bid or the lowest quotation received in a tender, bidding process or other procurement solicitation as adjudged in the evaluation process as per the tender or other procurement solicitation.
- d) **'Margin of purchase preference'** means the maximum extent to which the evaluated bid price of a 'Class-I local supplier' may be above the L1 for the purpose of purchase preference.
- e) **Fraud Prevention Policy** – shall mean the policy related to prevention of fraud attached as Annexure-VII to SCC.
- f) **Policy & Procedure for Debarment from Business Dealings** – shall mean the Debarment Policy forming part of Bidding Document.

1.1 Minimum Local Content

- 1.1.1 The local content requirement to categorize a Bidder/Supplier as 'Class-I local supplier' is minimum 60%.

2.0 Eligibility for Participation:

Only Class-I local suppliers are eligible to Bid. Bids received (if any) from Class-II Local Supplier / Non Local Supplier shall be out rightly rejected.

3.0 Purchase Preference: NOT APPLICABLE

4.0 Deleted

5.0 Verification of Local Content:

5.1 The 'Class-I local supplier'/ 'Class-II local supplier' shall be required to provide, in the Bid Form/relevant Attachment of Techno- Commercial Bid, self-certification / declaration that the Item offered meets the local content requirement for 'Class-I local supplier'/ 'Class-II local supplier' and shall give details of the location(s) at which the local value addition is made.

5.2 In case the total bid price of the supplier / bidder is in excess of INR 10 crore, the 'Class-I local supplier' shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content during execution prior to submission of last bill for payment.

In case aforesaid Certificate furnished by Contractor/Vendor is not in line with the declaration in respect of Local content in their bid, same shall be treated as false declaration.

5.3 Deleted

5.4 False declarations will be dealt in line with the Fraud Prevention Policy and Policy & Procedure for Debarment from Business Dealings of NTPC/Employer.

5.5 In case of false declaration / violation of the provision of PPP-MII Order, if a bidder has been debarred / banned by NTPC/Employer, then the fact and duration of debarment should be promptly brought to the notice of the Member-Convenor of the Standing Committee (as per para 16 of PPP-MII Order) and the Department of Expenditure through Ministry of Power, GOI.

5.6 A supplier who has been debarred / banned by any other procuring entity for violation of 'Public Procurement (Preference to Make In India), Order 2017' (PPP-MII Order) dated 15.06.2017 and its subsequent revisions / amendments issued by Department of Industrial Policy and Promotion (DIPP) shall not be eligible for evaluation/preference, as applicable, under the aforesaid procedures for duration of the debarment. The 'Class-I local supplier' shall be required to furnish a confirmation in this regard in the Bid Form/relevant Attachment of Techno-Commercial Bid.

6.0 Local Sourcing

- 6.1 The Bidder/its Sub-vendors must be Class-I local supplier for Item(s) mentioned at clause no. 40 of GTR in Technical Specifications, as applicable, in case such item(s) are Self Manufactured/Bought-out.
- 6.2 The Bidder / Contractor are requested to encourage and promote domestic manufacturing and production of goods and services by sourcing goods and services applicable under the contract / package from domestic suppliers / service providers. In this regard, Bidder shall also follow guidelines / advisory issued by Government of India from time to time, to the extent applicable to them, regarding promotion of local sourcing of goods including Bought out Items and services.

SECTION – IV

GENERAL CONDITIONS OF CONTRACT (GCC)

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Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
			A. Contract and Interpretation
1.	Definitions	1.1	Definitions The following words and expressions shall have the meanings hereby assigned to them: “Contract” means the Contract Agreement entered into between the Employer and the Contractor, together with the Contract Documents referred to therein; they shall constitute the Contract, and the term “the Contract” shall in all such documents be construed accordingly. “Contract Documents” means the documents listed in Article 1.1 (Contract Documents) of the Form of Contract Agreement (including any amendments thereto). “GCC” means the General Conditions of Contract hereof. “SCC” means the Special Conditions of Contract. “Day” means calendar day of the Gregorian Calendar. “Month” means calendar month of the Gregorian Calendar. “Employer” means the person named as such in the SCC and includes the legal successors or permitted assigns of the Employer. "Project Manager" means the person appointed by the Employer in the manner provided in GCC Sub-Clause 17.1 (Project Manager) hereof and named as such in the SCC to perform the duties delegated by the Employer. “Contractor” means the person(s) whose bid to perform the Contract has been accepted by the Employer and is named as such in the Contract Agreement, and includes the legal successors or permitted assigns of the Contractor. “Contractor’s Representative” means any person nominated by the Contractor and approved by the Employer in the manner provided in GCC Sub-Clause 17.2 (Contractor’s Representative and Construction Manager) hereof to perform the duties delegated by the Contractor. “Subcontractor,” including vendors, means any person to whom execution of any part of the Facilities, including preparation of any design or supply of any Plant and Equipment, is sub-contracted directly or indirectly by the Contractor, and includes its legal successors or permitted assigns. “Contract Price” means the sum specified in Article 2.1 (Contract Price) of the Contract Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract. “Facilities” means the Plant and Equipment to be supplied and installed, as well as all the Installation Services to be carried out by the Contractor under the Contract. “Plant and Equipment” means permanent plant, equipment, machinery, apparatus, articles and things of all kinds to be provided and incorporated

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			in the Facilities by the Contractor under the Contract (including the spare parts to be supplied by the Contractor under GCC Sub-Clause 7.3 hereof), but does not include Contractor's Equipment. "Installation Services" means all those services ancillary to the supply of the Plant and Equipment for the Facilities, to be provided by the Contractor under the Contract; e.g., transportation and provision of marine or other similar insurance, inspection, expediting, Site preparation works (including the provision and use of Contractor's Equipment and the supply of all construction materials required), installation, testing, pre-commissioning, commissioning, operations & maintenance required for achieving Completion of Facilities, the provision of operations and maintenance manuals, training of Employer's Personnel etc. "Contractor's Equipment" means all plant, facilities, equipment, machinery, tools, apparatus, appliances or things of every kind required in or for installation, completion and maintenance of Facilities that are to be provided by the Contractor, but does not include Plant and Equipment, or other things intended to form or forming part of the Facilities. "Site" means the land and other places upon which the Facilities are to be installed, and such other land or places as may be specified in the Contract as forming part of the Site. "Effective Date" means the date from which the Time for Completion shall be determined as stated in Article 3 (Effective Date for Determining Time for Completion) of the Form of Contract Agreement. "Time for Completion" means the time within which Completion of the Facilities as a whole (or of a part of the Facilities where a separate Time for Completion of such part has been prescribed) is to be attained in accordance with the stipulations in the SCC and the relevant provisions of the Contract. "Completion" means that the Facilities (or a specific part thereof where specific parts are specified in the SCC) have been completed operationally and structurally and put in a tight and clean condition, and that all work in respect of Pre-commissioning of the Facilities or such specific part thereof has been completed; and Commissioning has been attained as per Technical Specifications. "Pre-commissioning" means the testing, checking and other requirements specified in the Technical Specifications that are to be carried out by the Contractor in preparation for Commissioning as provided in GCC Clause 24 (Completion) hereof. "Commissioning" means trial/initial operation of the Facilities or any part thereof by the Contractor, which operation is to be carried out by the Contractor as provided in GCC Sub-Clause 25.1 (Commissioning) hereof, for the purpose of carrying out Guarantee Test(s). "Guarantee Test(s)" means the test(s) specified in the Technical Specifications to be carried out to ascertain whether the Facilities or a specified part thereof is able to attain the Functional Guarantees specified in the Technical Specifications in accordance with the provisions of GCC Sub-Clause 25.2 (Guarantee Test) hereof. "Operational Acceptance" means the acceptance by the Employer of the Facilities (or any part of the Facilities where the Contract provides for

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			acceptance of the Facilities in parts), which certifies the Contractor's fulfilment of the Contract in respect of Functional Guarantees of the Facilities (or the relevant part thereof) in accordance with the provisions of GCC Clause 28 (Functional Guarantees) hereof and shall include deemed acceptance in accordance with GCC Clause 25 (Commissioning and Operational Acceptance) hereof. "Defect Liability Period" means the period of validity of the warranties given by the Contractor commencing at Completion of the Facilities or a part thereof, during which the Contractor is responsible for defects with respect to the Facilities (or the relevant part thereof) as provided in GCC Clause 27 (Defect Liability) hereof. "Goods and Services Tax" or "GST" means taxes levied under the Central Goods and Services Tax Act, Integrated Goods and Services Tax Act, Goods and Services Tax (Compensation to States) Act, and various State/Union Territory Goods and Services Tax Laws and applicable cesses, if any under the laws in force (hereinafter referred to as relevant GST Laws).
		1.2	"Sub-contractor from a country which shares a land border with India" means; a) An entity incorporated, established or registered in such a country; or b) A subsidiary of an entity incorporated, established or registered in such a country; or c) An entity substantially controlled through entities incorporated, established or registered in such a country; or d) An entity whose beneficial owner is situated in such a country; or e) An Indian (or other) agent of such an entity; or f) A natural person who is a citizen of such a country; or g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.
		1.2.1	The beneficial owner for the purpose of clause "1.2" above will be as under; a) In case of company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means. Explanation i. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company; ii. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholdings or management rights or shareholders agreements or voting agreements; b) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more judicial person, has ownership of entitlement to more than fifteen

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			percent of capital or profits of the partnership; c) In case of an unincorporated associations or body of individuals, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals; d) Where no natural person is identified under (a) or (b) or (c) above, the beneficial owner is the relevant natural person who holds the position of senior managing officials; e) In case of a trust, the identifications of beneficial owner(s) shall include identification of the author of trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
		1.2.2	An Agent for the purpose of clause "1.2" is a person employed to do any act for another, or to represent another in dealings with third person: [Note: i. A person who procures and supplies finished goods from an entity from a country which shares a land border with India will, regardless of the nature of his legal or commercial relationship with the producer of the goods, be deemed to be an Agent. ii. However, a person who only procures raw material, components etc. from an entity from a country which shares a land border with India and then manufactures or converts them into other goods will not be treated as an Agent.]
2.	Contract Documents		
		2.1	Subject to Article1.2 (Order of Precedence) of the Contract Agreement, all documents forming part of the Contract (and all parts thereof) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.
		2.2	The Contract will be signed in three originals and the Contractor shall be provided with one signed original and the rest will be retained by the Employer.
		2.3	The Contractor shall provide free of cost to the Employer all the engineering data, drawing and descriptive materials submitted with the bid, in at least three (3) copies to form a part of the Contract immediately after Notification of Award.
		2.4	Subsequent to signing of the Contract, the Contractor at his own cost shall provide the Employer electronic version of the signed Contract Agreement on CD-ROM/ USB drive within thirty (30) days of its signing.
3.	Interpretation		
		3.1	Language
		3.1.1	Unless the Contractor is a national of the Employer's country and the Employer and the Contractor agree to use the local language, all Contract Documents, all correspondence and communications to be given, and all

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			other documentation to be prepared and supplied under the Contract shall be written in English, and the Contract shall be construed and interpreted in accordance with that language.
		3.1.2	If any of the Contract Documents, correspondence or communications are prepared in any language other than the governing language under GCC Sub-Clause 3.1.1 above, the English translation of such documents, correspondence or communications shall prevail in matters of interpretation.
		3.1.3	The English Translation of the documents shall be carried out by professional translators and the translator shall certify that he is proficient in both languages in order to translate the document and that the translation is complete and accurate. Further, translation shall be authenticated by the Indian Consulate located in the Country where the documents have been issued or the Embassy of that Country in India.
		3.2	Singular and Plural The singular shall include the plural and the plural the singular, except where the context otherwise requires.
		3.3	Headings The headings and marginal notes in the General Conditions of Contract are included for ease of reference, and shall neither constitute a part of the Contract nor affect its interpretation.
		3.4	Persons Words importing persons or parties shall include firms, corporations and government entities.
		3.5	Incoterms Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms. Incoterms means international rules for interpreting trade terms published by the International Chamber of Commerce (latest edition), 38 Cours Albert 1er, 75008 Paris, France.
		3.6	Construction of the Contract
		3.6.1	The Contracts to be entered into between the Employer and the successful bidder shall be as under: The Contracts to be entered between the Employer and the Contractor shall be as under : For Foreign Contractor - First Contract: For CIF (Indian Port-of-Entry) Supply of all Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from abroad.

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			- Second Contract: For Ex-Works (India) Supply of all Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from within the Employer's country. - Third Contract: For providing all services i.e. port handling, port clearance and port charges for the imported goods, Custom reconciliation, further loading, inland transportation for delivery at site, inland transit insurance, unloading, storage, handling at site, installation, insurance covers other than inland transit insurance, testing, commissioning and conducting Guarantee tests in respect of all the equipments supplied under the 'First Contract' and the 'Second Contract', and all other services as specified in the Contract Documents. If the foreign bidder has proposed an Assignee in his bid to execute the Second Contract and/or the Third Contract and has also furnished written unequivocal consent of the proposed Assignee to work as independent Contractor on the terms and conditions offered by the bidder and if the Employer is satisfied with capacity and experience of the Assignee, the Employer will enter into the 'Second Contract' and/or 'Third Contract' with the said Assignee. In case no Assignee has been proposed by the foreign bidder in his bid or if the Assignee fails to enter into the Second Contract and/or Third Contract with the Employer or if the Employer in its judgement does not find acceptance of the proposed Assignee as its Contractor, then the foreign bidder shall be obliged to enter into and execute all the three Contracts with the Employer. If the Employer accepts to enter into Second Contract and/or Third Contract with the Assignee of foreign bidder, the said Assignee, in addition to the Contract Performance Securities to be provided by the foreign Contractor for ten percent (10%) of the value of all the three Contracts, i.e. First Contract, Second Contract and Third Contract shall provide within twenty eight (28) days of Notification of Award, separate Contract Performance Security(ies) equivalent to ten percent (10%) of the value of the Contract(s) entered into with the Assignee for the due performance of the Contract, with an initial validity upto ninety (90) days beyond the scheduled Defects Liability Period. For Domestic Contractor - First Contract: For CIF (Indian Port-of-Entry) Supply of all Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from abroad. - Second Contract: For Ex-Works (India) Supply of all Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from within the Employer's country. - Third Contract: For providing all services i.e. port handling, port clearance and port charges for the imported goods, Custom reconciliation, further loading, inland transportation for delivery at site, inland transit insurance, unloading, storage, handling at site, installation, insurance covers other than inland transit insurance, testing, commissioning and conducting Guarantee tests in respect of all the equipments supplied under the 'First Contract' and the 'Second Contract', and all other services as specified in the Contract Documents.

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		3.6.2	The award of separate Contracts shall not in any way dilute the responsibility of the Contractor for the successful completion of the Facilities as per Contract Documents and a breach in one Contract shall automatically be construed as a breach of the other Contract(s) which will confer a right on the Employer to terminate the other Contract(s) also at the risk and the cost of the Contractor.
		3.7	Entire Agreement Subject to GCC Sub-Clause 16.4 hereof, the Contract constitutes the entire agreement between the Employer and Contractor with respect to the subject matter of Contract and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.
		3.8	Amendment No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party hereto.
		3.9	Independent Contractor The Contractor shall be an independent contractor performing the Contract. The Contract does not create any agency, partnership, joint venture or other joint relationship between the parties hereto. Subject to the provisions of the Contract, the Contractor shall be solely responsible for the manner in which the Contract is performed. All employees, representatives or Subcontractors engaged by the Contractor in connection with the performance of the Contract shall be under the complete control of the Contractor and shall not be deemed to be employees of the Employer, and nothing contained in the Contract or in any subcontract awarded by the Contractor shall be construed to create any contractual relationship between any such employees, representatives or Subcontractors and the Employer.
		3.10	Joint Venture or Consortium If the Contractor is a joint venture or consortium of two or more firms, all such firms shall be jointly and severally bound to the Employer for the fulfilment of the provisions of the Contract and shall designate one of such firms to act as a leader with authority to bind the joint venture or consortium. The composition or the constitution of the joint venture or consortium shall not be altered without the prior consent of the Employer.
		3.11	Non-Waiver 3.11.1 Subject to GCC Sub-Clause 3.11.2 below, no relaxation, forbearance, delay or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect or restrict the rights of that party under the Contract, nor shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract. 3.11.2 Any waiver of a party's rights, powers or remedies under the Contract must be in writing, must be dated and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

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		3.12	Severability If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.
		3.13	Country of Origin "Origin" means the place where the materials, equipment and other supplies for the Facilities are mined, grown, produced or manufactured, and from which the services are provided.
4.	Notices	4.1	Unless otherwise stated in the Contract, all notices to be given under the Contract shall be in writing, and shall be sent by personal delivery, airmail post, special courier, or e-mail to the address of the relevant party set out in the Contract Coordination Procedure to be finalised pursuant to GCC Sub-Clause 17.2.3.1, with the following provisions. 4.1.1 Any notice sent by airmail post or special courier shall be deemed (in the absence of evidence of earlier receipt) to have been delivered ten (10) days after despatch. In proving the fact of despatch, it shall be sufficient to show that the envelope containing such notice was properly addressed, stamped and conveyed to the postal authorities or courier service for transmission by airmail or special courier. 4.1.2 Any notice delivered personally or sent by e-mail shall be deemed to have been delivered on date of its despatch. 4.1.3 Either party may change its postal or e-mail address or addressee for receipt of such notices by ten (10) days' notice to the other party in writing.
		4.2	Notices shall be deemed to include any approvals, consents, instructions, orders and certificates to be given under the Contract.
5.	Governing Laws		
		5.1	The Contract shall be governed by and interpreted in accordance with laws in force in India. The Courts of Kolkata shall have exclusive jurisdiction in all matters arising under the Contract.
6.	Settlement of Disputes		
		6.1	Mutual Consultation If any dispute of any kind whatsoever shall arise between the Employer and the Contractor in connection with or arising out of the Contract, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the Facilities, whether during the progress of the Facilities or after their completion and whether before or after the termination, abandonment or breach of the Contract, the parties shall seek to resolve any such dispute or difference by mutual consultation. On failure of Mutual Consultation, the same shall be taken up by either party only through AMRCD [for dispute with CPSE/ Government

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			Departments as Contractor] or to CCIE [for dispute other than CPSE/ Government Departments and disputed amount exceeds Rs. 10.0 Crs. and on agreement of the Contractor/ vendor], or through arbitration for other cases. Moreover, in cases of disputes pending before the Arbitration Tribunals or the Courts, the parties may opt for CCIE on agreement of both parties and only in the event of the parties withdrawing from such arbitration proceedings and undertaking to forego their rights to proceed further arbitration in the subject matter. The detailed procedures are as follows:
		6.2	Administrative Mechanism for Resolution of CPSEs Disputes (AMRCD): In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs) inter se and also between CPSEs and Government Departments (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments) and the parties fail to resolve such a dispute or difference by mutual consultation, then such dispute or difference shall be taken up by either party for its resolution only through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes), as per the prevailing rules/ guidelines issued by Department of Public Enterprises, GOI.
		6.3	Conciliation Committees of Independent Experts (CCIE): If the dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) is not between “Central Public Sector Enterprises (CPSEs) inter se and also not between CPSEs and Government Departments (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments)” and the parties fail to resolve such a dispute or difference by mutual consultation within 30 days from initial dispute reference from the Contractor, then the dispute may be settled through “Conciliation Committees of Independent Experts as formed by MoP, GOI (only for the Contract having disputed amount exceeds Rs. 10 Crs. considering the claim and counter claim of the parties and conciliation request through CCIE has been raised by the contractor)”. The procedure of CCIE shall not be treated as alternate arbitration proceedings where both parties come with Statement of claims/defence, arguments/counter arguments, rejoinders, written submissions etc., aided by their respective lawyers. The forum of CCIE is a conciliation forum, where mutual give and take constitutes the essence, rather than strict legal positions of the parties. Hence, the parties are expected to be brief and to the point before the committee with regard to their respective stance and view the exercise in the spirit of conciliation / settlement. The Conciliation process shall be conducted under Part III of the Arbitration and Conciliation Act, 1996. The Conciliation Committee would either be able to resolve and settle and dispute(s) between the parties, or the process may fail. In case of failure of the conciliation process at the level of the Conciliation Committee, the parties may withdraw from conciliation process and take recourse to the laid down legal process of Courts. However, the option of Arbitration would not be available once the conciliation mechanism has been exercised. In the event of the conciliation proceedings being successful, the parties to the dispute would sign the written settlement agreement and the conciliators would authenticate the same. Such settlement agreement would then be binding on the parties in terms of Section 73 of the Arbitration and Conciliation Act, 1996.

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			After successful conclusion of proceedings, the Parties to the conciliation process, have to undertake and complete all necessary actions for implementation of the terms of settlement within a period of 30 days from execution of settlement agreement, unless a different timeline not exceeding 60 days is agreed upon in settlement agreement. All pending claims of parties, in connection with the dispute, before any other legal forum are to be withdrawn within the said 30 days in pursuance of the settlement agreement. Once the conciliation process succeeds in reaching a settlement agreement, at the level of the Conciliation Committee, further legal proceedings by DVC will be allowed only after obtaining the approval of Ministry of Power, GOI. Procedure in cases already pending before the Arbitral Tribunals / Courts: In cases of disputes pending before the Arbitration Tribunals or the Courts, both of the parties [i.e. DVC and Contractor] need to agree to explore the possibilities of conciliation through the Conciliation Committee of Independent Experts. In case of such agreement, an appropriate reference shall be made to the Conciliation Committee, upon which the Committee shall proceed to examine such reference(s). The option of resolution through conciliation through CCIE would be open only in the event of the parties withdrawing from arbitration proceedings and undertaking to forego their rights to proceed for further arbitration in the subject matter. However, other legal remedies would be open to the parties in the event of the conciliation proceedings not being successful.
		6.4	Deleted
		6.5	ARBITRATION: 6.5.1 Any dispute in respect of which a notice of intention to commence arbitration has been given, shall be finally settled by arbitration. Arbitration may be commenced prior to or after completion of the Facilities. 6.5.2 Any dispute submitted by a party to arbitration shall be heard by an arbitration panel composed of three arbitrators, in accordance with the provisions set forth below. 6.5.3 The Employer and the Contractor shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the two arbitrators do not succeed in appointing a third arbitrator within twenty-eight (28) days after the latter of the two arbitrators has been appointed, the third arbitrator shall, at the request of either party, be appointed by the Appointing Authority for arbitrator designated in the Clause 6.5.7 below. 6.5.4 If one party fails to appoint its arbitrator within forty-two (42) days after the other party has named its arbitrator, the party which has named an arbitrator may request the Appointing Authority to appoint the second arbitrator. 6.5.5 If for any reason an arbitrator is unable to perform its function, the mandate of the Arbitrator shall terminate in accordance with the provisions of applicable laws as mentioned in GCC Clause 30 (Governing

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			Law) and a substitute shall be appointed in the same manner as the original arbitrator. 6.5.6 Deleted 6.5.7 Arbitration proceedings shall be conducted as follows: - (i) Appointing Authority for first Arbitrator: Chairman of DVC. Appointing Authority for third Arbitrator: a) President, Institution of Engineers in case of an Indian Contractor. b) President, International Chambers of Commerce, Paris in case of a Foreign Contractor. (ii) Rules of procedure for arbitration proceedings: a) In case of a foreign contractor the arbitration proceeding shall be conducted in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. b) In case of an Indian Contractor, the arbitration proceedings shall be conducted in accordance with Indian Arbitration and Conciliation Act 1996 and amendments thereto. (iii) The Place for Arbitration shall be: Kolkata, India The decision of a majority of the arbitrators (or of the third arbitrator chairing the arbitration panel, if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction as decree of the court. The parties thereby waive any objections to or claims of immunity from such enforcement. 6.5.8 The decision of a majority of the arbitrators (or of the third arbitrator chairing the arbitration panel, if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction as decree of the court. The parties thereby waive any objections to or claims of immunity from such enforcement. 6.5.9 The arbitrator(s) shall give reasoned award.

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		6.6	Notwithstanding any reference to the arbitration herein, a) The parties shall continue to perform their respective obligations under the Contract unless they otherwise agree b) The Employer shall pay the Contractor any monies due to the Contractor.
		6.7	Arbitration Awards: In cases where DVC has challenged an arbitral award and, as a result, the amount of the arbitral award has not been paid, 75% of the arbitral award (which may include interest up to date of the award) shall be paid by DVC to the contractor/ concessionaire against a Bank Guarantee (BG). The BG shall only be for the said 75% of the arbitral award as above and not for the interest which may become payable to DVC should the subsequent court order require refund of the said amount. The payment may be made into a designated Escrow Account with the stipulation that the proceeds will be used first, for payment of lenders' dues, second, for completion of the project and then for completion of other projects of DVC as mutually agreed/ decided. Any balance remaining in the escrow account subsequent to settlement of lenders' dues and completion of projects of DVC may be allowed to be used by the contractor/concessionaire with the prior approval of the lead banker and DVC. If otherwise eligible and subject to contractual provisions, retention money and other amounts withheld may also be released against BG.

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			B. Subject Matter of Contract
7.	Scope Of Facilities		
		7.1	Unless otherwise expressly limited in the Technical Specifications, the Contractor's obligations cover the provision of all Plant and Equipment including structural steel and the performance of all Installation Services and civil works, allied works etc. required for the design, the manufacture (including procurement, quality assurance, construction, installation, associated civil works, Pre-commissioning and delivery) of the Plant and Equipment and the installation, completion, commissioning and performance testing of the Facilities in accordance with the plans, procedures, specifications, drawings, codes and any other documents as specified in the Technical Specifications. Such specifications include, but are not limited to, the provision of supervision and engineering services; the supply of labour, materials, equipment, spare parts (as specified in GCC Sub-Clause 7.3 below) and accessories; Contractor's Equipment; construction utilities and supplies; temporary materials, structures and facilities; transportation (including, without limitation, unloading and hauling to, from and at the Site); and storage, except for those supplies, works and services that will be provided or performed by the Employer, as set forth in Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement.
		7.2	The Contractor shall, unless specifically excluded in the Contract, perform all such work and/or supply all such items and materials not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Completion of the Facilities as if such work and/or items and materials were expressly mentioned in the Contract.
		7.3	In addition to the supply of Mandatory Spare Parts included in the Contract, the Contractor agrees to supply spare parts required for the operation and maintenance of the Facilities. However, the identity, specifications and quantities of such spare parts and the terms and conditions relating to the supply thereof are to be agreed between the Employer and the Contractor, and the price of such spare parts shall be that given in Price Schedule No. 6, which shall be added to the Contract Price. The price of such spare parts shall include the purchase price therefor and other costs and expenses (including the Contractor's fees) relating to the supply of spare parts. Prices of recommended spares covered under price Schedule No. 6 shall be kept valid for a period of six (6) months after placement of Notification of Award for Main Equipment and Mandatory Spares. 7.3.1 The Contractor agrees that the spare parts recommended by him for 3 years operation and quoted in Schedule No. 6 shall be supplied by him at the same terms and conditions as are otherwise applicable to this Contract. Further, the Contractor also agrees to supply spare parts required for the operation and maintenance of the Facilities as per provision of subsequent paragraphs of this Sub-Clause. 7.3.1.1 All the spares for the equipment under the Contract will strictly conform to the Specification and other relevant documents and will be identical to the corresponding main equipment/

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			components supplied under the Contract and shall be fully interchangeable. 7.3.1.2 All the mandatory spares covered under the Contract shall be produced along with the main equipment as a continuous operation and the delivery of the spares will be effected along with the main equipment in a phased manner and the delivery would be completed by the respective dates for the various categories of equipment as per the agreed network. In case of recommended spares the above will be applicable provided the order for the recommended spares have been placed with the Contractor prior to commencement of manufacture of the main equipment. 7.3.1.3 The Contractor will provide the Employer with the manufacturing drawings, catalogues, assembly drawings and any other document required by the Employer so as to enable the Employer to identify the recommended spares. Such details will be furnished to the Employer as soon as they are prepared but in any case not later than six months prior to commencement of manufacture of the corresponding main equipment. 7.3.1.4 To enable the Employer to finalise the requirement of recommended spares which are ordered subsequent to placement of order for main equipment/plant, in addition to necessary technical details, catalogue and such other information brought-out herein above, the Contractor will also provide a justification in support of reasonableness of the quoted prices of spares which will, inter-alia, include documentary evidence that the prices quoted by the Contractor to the Employer are not higher than those charged by him from other customers in the same period. 7.3.1.5 In addition to the spares recommended by the Contractor, if the Employer further identifies certain items of spares, the Contractor will submit the prices and delivery quotation for such spares within thirty (30) days of receipt of such request with a validity period of six (6) months for consideration by the Employer and placement of order for additional spares if the Employer so desires. 7.3.1.6 The quality plan and the inspection requirement finalised for the main equipment will also be applicable to the corresponding spares. 7.3.1.7 The Contractor will provide the Employer with all the addresses and particulars of his sub-suppliers while placing the order on vendors for items/components/equipment covered under the Contract and will further ensure with his vendors that the Employer, if so desires, will have the right to place order for spares directly on them on mutually agreed terms based on offers of such vendors. 7.3.1.8 The Contractor shall guarantee the long term availability of spares to the Employer for the full life of the equipment covered under the Contract. The Contractor shall guarantee that before going out of production of spare parts of the equipment covered under the Contract, he shall give the Employer at least 2 years advance notice so that the latter may order his bulk

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			requirement of spares, if it so desires. The same provision will also be applicable to Sub-contractors. Further, in case of discontinuance of manufacture of any spares by the Contractor and/or his Sub-contractor, Contractor will provide the Employer, two years in advance, with full manufacturing drawings, material specification and technical information including information on alternative equivalent makes required by the Employer for the purpose of manufacture/procurement of such items. 7.3.1.9 The prices of all future requirements of item of spares beyond 3 years operational requirement will be derived from the corresponding ex-works price at which the order for such spares have been placed by Employer as a part of mandatory spares or recommended spares, or from the rates of mandatory spares or recommended spares as quoted by/negotiated with the Contractor. Ex-works order price of future spares shall be computed in accordance with the price adjustment provisions covered under the main Contract and there will be no ceiling on the amount of variation in the prices. The above option for procuring future recommended spares by the Employer shall remain valid for the period of 5 years from the date of Commissioning of the equipment. 7.3.1.10 The Contractor will indicate in advance the delivery period of the items of spares, which the Employer may procure in accordance with above sub-clause. In case of emergency requirements of spares, the Contractor would make every effort to expedite the manufacture and delivery of such spares on the basis of mutually agreed time schedule. 7.3.1.11 In case the Contractor fails to supply the mandatory, recommended spares or long term spares in the terms stipulated above, the Employer shall be entitled to purchase the same from the alternate sources at the risk and the cost of the Contractor and recover from the Contractor, the excess amount paid by the Employer over the rates worked on the above basis. In the event of such risk purchase by the Employer, the purchases will be as per the Works and Procurement Policy of the Employer prevalent at the time of such purchases and the Employer at his option may include a representative from the Contractor in finalising the purchases. 7.3.1.12 It is expressly understood that the final settlement between the parties in terms of relevant clauses of the Contract Documents shall not relieve the Contractor of any of his obligations under the provision of long term availability of spares and such provisions shall continue to be enforced till the expiry of 5 years period reckoned from the scheduled date of Commissioning of the Plant and Equipment unless otherwise discharged expressly in writing by the Employer. Further, the provisions pertaining to long term availability of spares shall be extended beyond 5 years applicability period mentioned hereinabove if so desired by the Employer and at the mutually acceptable escalation formula. 7.3.1.13 The Contractor shall warrant that all spares supplied will be new and in accordance with the Contract Documents and will

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			be free from defects in design, material and workmanship and shall further guarantee as under: (i) For 3 years operational spares (both mandatory and recommended) a) For any item of spares ordered or to be ordered by the Employer for 3 years operational requirement of the plant which are manufactured as a continuous operation together with the corresponding main equipment/component, the Defect Liability Period will be twelve (12) months from the scheduled date of commercial operation of main equipment/plant under the Contract or 2 months from the date of Completion of Facilities whichever is earlier. 'Commercial Operation' shall mean the conditions of operation in which the complete equipment covered under the Contract is officially declared by the Employer to be available for continuous operation at different loads up to and including rated capacity. Such declaration by the Employer, however, shall not relieve or prejudice the Contractor any of his obligations under the Contract. In case of any failure in the original component/ equipment due to faulty designs, materials and workmanship, the corresponding spare parts, if any, supplied will be replaced without any extra cost to the Employer unless a joint examination and analysis by the Employer and the Contractor of such spare parts prove that the defect found in the original part that failed, can safely be assumed not to be present in spare parts. Such replaced spare parts will have the same Defect Liability as applicable to the replacement made for the defective original part/component provided that such replacement for the original equipment and the spare replaced are again manufactured together. The discarded spare parts will become the property of the Contractor as soon as they have been replaced by the Contractor. b) For the item of spares ordered or to be ordered by the Employer for 3 years operational requirement of the plant, which with the written approval of the Employer, are not manufactured as a continuous operation will be warranted for 7000 hrs of trouble free operation if used within a period of eighteen (18) months reckoned from the date of delivery at site. However, if such spare parts are put to use after eighteen (18) months of the delivery at Site then the guarantee of such spares will stand valid till the expiry of thirty six (36) months from the scheduled date of Commissioning of equipment/plant covered under the contract or 7000 hrs of trouble free operation after such spares are put in service, whichever is earlier. (ii) For long term requirement

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			For item of spares that may be ordered by the Employer to cover requirements beyond 3 years of Initial Operation of the plant, the warranty will be till the expiry of 7000 hrs of trouble free operation if used within a period of eighteen (18) months from the date of delivery at site. For item of spares that may be used after eighteen (18) months from the date of delivery at site, the warranty period will be 12 months from the date they are put to use or 7000 hrs of trouble free operation, whichever is earlier. In any case the defect liability of spares will expire at the end of forty eight (48) months from the date of their receipt at site. (iii) The Defect Liability of spares covered in para (i) & (ii) above, that are not used within 18 months from the respective date of the delivery at Site will, however, be subject to condition that all such spares being stored/ maintained/ preserved in accordance with Contractor's standard recommended practice, if any, and the same has been furnished to the Employer.
8.	Time for Commencement and Completion		
		8.1	The Contractor shall commence work on the Facilities from the date of Notification of Award and without prejudice to GCC Sub-Clause 26.2 hereof, the Contractor shall thereafter proceed with the Facilities in accordance with the time schedule specified in Appendix 4 (Time Schedule) to the Contract Agreement.
		8.2	The Contractor shall attain Completion of the Facilities (or of a part where a separate time for Completion of such part is specified in the Contract) within the time stated in the SCC or within such extended time to which the Contractor shall be entitled under GCC Clause 40 (Extension of Time for Completion) hereof.
9.	Contractor's Responsibilities		
		9.1	The Contractor shall design, manufacture (including associated purchases and/or subcontracting), install and complete the Facilities and carryout the Guarantee tests with due care and diligence in accordance with the Contract.
		9.2	The Contractor confirms that it has entered into this Contract on the basis of a proper examination of the data relating to the Facilities (including any data as to boring tests) provided by the Employer, and on the basis of information that the Contractor could have obtained from a visual inspection of the Site (if access thereto was available) and of other data readily available to it relating to the Facilities as at the date fifteen (15) days prior to deadline set for price bid submission. The Contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the Facilities.
		9.3	The Contractor shall acquire in its name all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located that are necessary for the performance of the Contract, including, without limitation, visas for the Contractor's and Subcontractor's personnel and

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			entry permits for all imported Contractor's Equipment. The Contractor shall acquire all other permits, approvals and/or licenses that are not the responsibility of the Employer under GCC Sub-Clause 10.3 hereof and that are necessary for the performance of the Contract.
		9.4	The Contractor shall comply with all laws in force in the country where the Facilities are installed and where the Installation Services are carried out. The laws will include all national, provincial, municipal or other laws that affect the performance of the Contract and bind upon the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any and all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the Contractor or its personnel, including the Subcontractors and their personnel, but without prejudice to GCC Sub-Clause 10.1 hereof.
		9.5	Any Plant, Material and Services that will be incorporated in or be required for the Facilities and other supplies shall have their origin as specified under GCC Clause 3.13 (Country of Origin).
10.	Employer's Responsibilities		
		10.1	The Employer shall ensure the accuracy of all information and/or data to be supplied by the Employer as described in Appendix 6 (Scope of Works and Supply by the Employer) to the Contract, except when otherwise expressly stated in the Contract.
		10.2	The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way, as specified in Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement. The Employer shall give full possession of, and accord all rights of access thereto on or before the date(s) specified in Appendix 6. The Employer reserves the right to hand over the Site in parts progressively to the Contractor. The Contractor will be required to take possession of the Site without any undue delay and do work on the released fronts in parts without any reservation whatsoever.
		10.3	The Employer shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located which such authorities or undertakings require the Employer to obtain them in the Employer's name, are necessary for the execution of the Contract (they include those required for the performance by both the Contractor and the Employer of their respective obligations under the Contract), including those specified in Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement.
		10.4	If requested by the Contractor, the Employer shall use its best endeavours to assist the Contractor in obtaining in a timely and expeditious manner all permits, approvals and/or licenses necessary for the execution of the Contract from all local, state or national government authorities or public service undertakings that such authorities or undertakings require the

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			Contractor or Subcontractors or the personnel of the Contractor or Subcontractors, as the case may be, to obtain.
		10.5	Unless otherwise specified in the Contract or agreed upon by the Employer and the Contractor, the Employer shall provide sufficient, properly qualified operating and maintenance personnel; shall supply and make available all raw materials, utilities, lubricants, chemicals, catalysts, other materials and facilities ; and shall perform all work and services of whatsoever nature, to enable the Contractor to properly carry out Pre-commissioning, Commissioning and Guarantee Tests, all in accordance with the provisions of Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement at or before the time specified in the program furnished by the Contractor under GCC Sub-Clause 18.2 (Program of Performance) hereof and in the manner thereupon specified or as otherwise agreed upon by the Employer and the Contractor.
		10.6	The Employer shall be responsible for the continued operation of the Facilities after Completion, in accordance with GCC Sub-Clause 24.8, and shall be responsible for facilitating the Guarantee Test(s) for the Facilities, in accordance with GCC Sub-Clause 25.2.
		10.7	All costs and expenses involved in the performance of the obligations under this GCC Clause 10 shall be the responsibility of the Employer, save those to be incurred by the Contractor with respect to the performance of Guarantee Tests, in accordance with GCC Sub-Clause 25.2.
C. Payment			
11.	Contract Price		
		11.1	The Contract Price shall be as specified in Article 2 (Contract Price and Terms of Payment) of the Form of Contract Agreement.
		11.2	The Contract Price shall be adjusted in accordance with provisions of Appendix-2 (Price Adjustment) to the Contract Agreement.
		11.3	Subject to GCC Sub-Clauses 9.2, 10.1 and 35 (Unforeseen Conditions) hereof, the Contractor shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.
12.	Terms of Payment		
		12.1	The Contract Price shall be paid as specified in Appendix 1 (Terms and Procedures of Payment) to the Contract Agreement. The procedures to be followed in making application for and processing payments shall be those outlined in the same Appendix 1.
		12.2	No payment made by the Employer herein shall be deemed to constitute acceptance by the Employer of the Facilities or any part(s) thereof.
		12.3	The currency or currencies in which payments are made to the Contractor under this Contract shall be specified in Appendix 1 (Terms and Procedures of Payment) to the Contract Agreement, subject to the general

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			principle that payments will be made in the currency or currencies in which the Contract Price has been stated in the Contractor's bid.
		12.4	For payments related to Erection / Civil / Site Fabricated Structural works: A single designated ESCROW account shall be opened by the Contractor in any Scheduled Bank of India under intimation to Employer. All payments related to Erection / Civil / Site Fabricated Structural works by the Employer due under the contract to the Contractor shall be released into above-mentioned ESCROW account set up as per the Tri-Partite Escrow Agreement between Employer, Contractor and Escrow Bank. The payment shall be disbursed in accordance with the mechanism set out in the Contract and Escrow Agreement. The purpose of the Escrow Account would be to ensure that payments received under the contract are solely used for implementation of the Contract. Under Tripartite Escrow Agreement, the Escrow Bank will agree to ensure that amounts received in the ESCROW Account are utilized for making payments only to suppliers of goods and services, statutory authorities, establishment expenses etc. as may be required in the performance of the contract. All expenses/charges for opening /operation (including Annual Fee) of the Escrow Account shall be paid by the Contractor. The draft agreement is annexed as Annexure-III to Appendix-1 to Form of Contract Agreement, Section-VII, Book 3 of 3 (Part-1), which shall be followed for executing Escrow Account Agreement. The Detailed Operative Procedure and Terms and Conditions of Escrow Account (Schedule III of draft agreement) shall be finalized between the Employer, Contractor and the Escrow Bank within 15 days of the placement of award.
13.	Securities		
		13.1	Issuance of Securities The Contractor shall provide the securities specified below in favour of the Employer at the times, and in the amount, manner and form specified below.
		13.2	Advance Payment Security 13.2.1 The Contractor shall, within twenty-eight (28) days of the Notification of Award of Contract, provide a security in an amount equal to the advance payment for supply of Plant & Equipment and 110% of the advance amount for Installation Services and Civil & Allied Works calculated in accordance with Appendix 1 (Terms and Procedures of Payment) to the Contract Agreement, and in the currency or currencies of the Contract, with an initial validity of up to ninety (90) days beyond the schedule date of Completion of the last facility covered under the package in accordance with GCC Clause 24. However, in case of delay in completion of the facilities under the package, the validity of this security shall be extended by the period of such delay. The advance payment security shall also cover the amount of GST as applicable on the advance payment to be paid to the contractor. 13.2.2 The security shall be in the form of an unconditional bank guarantee as per the proforma provided in Section VII (Forms and Procedures)- Form of Advance Payment Security. The

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			Advance payment Security shall be reduced pro-rata every three (3) months after First Running Account Bill/Stage Payment under the Contract based on the value of the respective equipment/facilities received and applicable GST. The cumulative amount of reduction at any point of time shall not exceed ninety (90%) of the advance and the amount of GST paid on the advance amount corresponding to cumulative value of the respective equipment/Facilities supplied and received as per certificate issued by the Project Manager. The balance shall be released upon release of respective milestone linked payments as identified in Appendix-1 of form of Contract Agreement. In case milestone payment is not envisaged in the package, the balance shall be released after Completion of those Facilities on certification by the Project Manager. It should be clearly understood that reduction in the value of security for advance shall not in any way dilute the Contractor's responsibility and liabilities under the Contract including in respect of the Facilities for which the reduction in the value of security is allowed.
		13.3	Performance Security 13.3.1 The Contractor shall, within twenty-eight (28) days of the Notification of Award, provide a security for the due performance of the Contract for ten percent (10%) of the Contract Price with an initial validity upto ninety (90) days beyond the Defects Liability Period. If the Employer enters into the Contract with the Assignee of a foreign Contractor pursuant to GCC Sub Clause 3.6, the said Assignee, in addition to the Contract Performance Security to be provided by the Contractor for ten percent (10%) of the value of all the Contracts shall provide within twenty eight (28) days of the Notification of Award, a separate Contract Performance Security equivalent to ten percent (10%) of the value of Contract entered into with the assignee, for the due performance of Contract with an initial validity upto Ninety (90) days beyond the Defects Liability Period. However, in case of delay in completion of the Defect Liability Period, the validity of all the Contract Performance Securities shall be extended by the Period of such delay correspondingly. Security as mentioned above shall remain non-negotiable during the performance of the contract. 13.3.2 The performance security shall be denominated in the currency of the Contract and shall be in the form of unconditional bank guarantee provided in Section-VII (Forms and Procedures)-Form of Performance Security of the bidding documents. 13.3.3 Unless otherwise stipulated in SCC, the security shall be reduced pro rata to the Contract Price of a part of the Facilities for which a separate time for Completion is provided, twenty one (21) months after Completion of the Facilities or where relevant part thereof, or fifteen (15) months after Operational Acceptance of the Facilities (or the relevant part thereof), whichever occurs first; provided, however, that if the Defects Liability Period has been extended on any part of the Facilities pursuant to GCC Sub-Clause 27.8 hereof, the Contractor shall issue an additional security in an amount proportionate to the Contract Price of that part. The security shall be returned to the Contractor

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			immediately after its expiration, provided, however, that if the Contractor, pursuant to GCC Sub-Clause 27.10, is liable for an extended warranty obligation, the performance security shall be extended for the period and up to the amount agreed upon or as specified in the SCC. 13.3.4 Whenever adjustments under Clause 39 [Change in the Facilities] result in an accumulative increase or decrease of the Contract Price by more than fifteen percent (15%) of the Contract Price stated in the Contract Agreement: (a) in the case of such an increase, at the Project Manager's request the Contractor shall promptly increase the amount of the Performance Security in that currency by a percentage equal to the accumulative increase; or (b) in the case of such a decrease, subject to the Project Manager's prior consent the Contractor may decrease the amount of the Performance Security in that currency by a percentage equal to the accumulative decrease. Security for Deed of Joint Undertaking In case Deed(s) of Joint Undertaking by the Contractor along with his Collaborator(s) / Associate(s) form part of the Contract, then, in addition to the Contract performance securities furnished by the Contractor, the Collaborator(s) / Associate(s) shall furnish, within twenty eight (28) days of the Notification of Award, separate unconditional Bank Guarantee(s) towards faithful performance of the Deed(s) of Joint Undertaking for amount(s) specified in relevant Item of Bid Data Sheets and with validity till such period as specified in the corresponding format for Deed of Joint Undertaking. However, in case of delay in completion of defect liability period, the validity of Bank Guarantee(s) submitted towards faithful performance of Deed(s) of Joint Undertaking shall be extended by such period of delay. The Bank Guarantee(s) shall be denominated in the currency or currencies of Contract and shall be as per the proforma provided in Section-VII (Forms and Procedures) - Form of Bank Guarantee to be furnished by Associate(s) / Collaborator(s). 13.4 13.5 The Bank Guarantees submitted towards Advance Payment Security, Contract Performance Security and Security in compliance to the Deed of Joint Undertaking (if applicable) shall be essentially from any of the Banks listed at Annexure-I to Section-V (Special Conditions of Contract) of the bidding documents. In case of guarantees issued by branches outside India for foreign banks, the bank guarantees shall be routed through the correspondent Bank in India for due verification of signatures of the executant and lodgement of claim. The bank guarantee submitted from within India towards Advance Payment Security, Contract Performance Security and Security for Deed of Joint Undertaking (if applicable) shall be issued on a stamp paper of appropriate value as per stamp act prevailing in the State of the issuing Bank in India or the state of West Bengal in India or the State from where the BG shall be operated, whichever is higher.

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	13.6		Where a BG issued by a Bank outside India also needs to bear Stamp Duty of appropriate value applicable to the place in DVC / Employer where BG is to be submitted, the BG will be adjudicated from Collector of Stamps, within 3 months of arrival of BG in India and the expenses incurred in this regard shall be borne by the Contractor.
	13.7		a) All BGs except BG issued by a Bank outside India and all Insurance Surety Bonds except those issued by an Indian Insurance company outside India , shall be received from issuing Bank/Insurance company directly through post/ courier, by DVC at below mentioned address: General Manager, C&M Department, 3rd Floor, DVC Towers, VIP Road, Kolkata, West Bengal, India, PIN – 700054 Mobile No. +91 8335037065 Email ID: amitava.maity@dvc.gov. A BG issued by a Bank outside India and Insurance Surety Bond issued by an Indian Insurance company outside India need to be submitted by the Bidder directly to the employer as defined in BDS. The BG/ Insurance Surety Bond also needs to bear stamp duty of appropriate value applicable to the place in DVC where BG/ Insurance Surety Bond is to be submitted. The BG/ Insurance Surety Bond may be got adjudicated by the employer from Collector of Stamps, within 3 months of arrival of BG/ Insurance Surety Bond in India. Expenses incurred in this regard shall be adjusted from the payment due to the contractor. b) A soft copy of the BG/ Insurance Surety Bond is mandatorily required to be mailed to Amitava.maity@dvc.gov.in by the issuing Bank/ Insurance company. c) Confirmation of BGs through Structured Financial Messaging System (SFMS)/SWIFT[As per DVC's Bank details] While issuing the physical BGs, the Bidder's Bank shall also send electronic message through secure SFMS (in case of BGs issued from within India) or SWIFT (in case of BGs issued from outside India) to Employer's Beneficiary Bank whose details are provided herein below: (i) Bank Name: United Bank of India (as now Punjab National Bank) (ii) Branch: New Manicktala Branch (iii) Bank Address: New Manicktala Branch, VIP Road, Kolkata-7000054 (iv) IFSC Code: PUNB0008220 ['0' Stands for zero] BG issuing/amending bank must send the BG advice in the form of message format via SFMS (Structured Financial Messaging System) as provided by RBI. The format of the message for confirmation of the BG shall be as below: BG advising message: IFN 760COV/ IFN 767COV via SFMS

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			Field Number: Particulars (to be mentioned in Row 1) 7037: DVC BG (unique identifier) d) All Bank Guarantees/ Insurance Surety Bond should be enforceable for minimum ninety (90 days) after expiry of its validity. e) Extension of all BGs/ Insurance Surety Bonds should be on Stamp paper of same value as that of the original BG/ Insurance Surety Bond. Minimum extension of any BG/ Insurance Surety Bond should be three months.
14.	Taxes and Duties		
		14.1	Except as otherwise specifically provided in the Contract, the Contractor shall bear and pay all taxes, duties, levies and charges assessed on the Contractor, its Sub-contractor or their employees by all municipal, state or national government authorities in connection with the Facilities in and outside of the country where the Site is located.
		14.2	Notwithstanding GCC Sub-Clauses 14.1 above, the Employer shall bear and promptly pay/reimburse all Customs and Import duties (including GST), on the Plant and Equipment including Mandatory Spares supplied from abroad and specified in Price Schedule No. 1 (and on Recommended Spare Parts to be supplied from abroad and specified in Price Schedule No. 6, when awarded) and that are to be incorporated into the Facilities, by the law of the country where the Site is located. However, if the Plant and Equipment are shipped in Shipper's containers, then the custom duty, GST and any other Tax, duty, levy or cess levied on the cost of empty containers shall be borne and paid/reimbursed by the Contractor. Further, Anti-dumping duty, Counter-vailing duty on subsidised articles, Safeguard duty etc. and any other tax including GST, levies, cess etc. applicable on such additional duties, if imposed on Plant and Equipment including Type Test and Mandatory Spares/ Recommended Spares, shall be borne by the Contractor. If the liability/ payment on account of Customs Duty/ import duty and GST on CIF price (Schedule-1) exceeds the amount quoted by the bidder in schedule-7A, at any time during the performance of the contract, such excess shall be recovered from the Contractor. Notwithstanding the foregoing, if, after the date seven (7) days prior to the deadline set for Price Bid submission, the relevant Customs Acts & Notification of Govt. of India is abrogated or changed (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently increases the taxes & duties quoted by the bidder in Schedule-7A, any such increase in taxes & duties shall be to the account of Employer. The Employer shall also bear and pay/reimburse to the Contractor Goods and Services Tax (GST) applicable on: (a) Plant and Equipment (including Type Test Charges) and Mandatory Spares to be supplied from within the Employer's country specified in Price Schedule No. 2 (and also on locally supplied Recommended Spare Parts quoted in Price Schedule No. 6, when awarded) to be incorporated in the Facilities, by the law of country where the site is located, (b) local transportation & insurance, other local costs incidental to delivery of plant & equipment including mandatory spares specified in Price Schedule No. 3 (and also of locally supplied Recommended Spare Parts quoted in Price Schedule No. 6, when awarded) and (c) Installation Services including Erection, Civil & Allied

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			Works and other services specified in Price Schedule No. 4. However, all other taxes, duties & levies as may be applicable on goods and services specified in Price Schedules Nos. 2, 3 & 4 and on the materials used for civil construction works and erection & commissioning shall be to the contractor's account and no separate claim in this regard will be entertained by the Employer. For the above purpose, price components of Schedule-2 & Schedule-4, if quoted in foreign currency and so incorporated in the contract, shall be converted to Indian Rupees as per the exchange rate determined by relevant GST notifications / rules prevailing on the date and time of supply of goods and services. Notwithstanding anything to contrary contained in the Contract, the Contractor's right to payment under the Contract is subject to issuance of valid tax invoice, payment of applicable GST to the credit of appropriate Government and submission of valid particulars of tax invoice under GST returns in accordance with GST Law. The Contractor shall issue tax invoices, file appropriate returns, and deposit the applicable GST to the account of appropriate government within the time limit prescribed under the GST Law. In the event of any default, Contractor shall be liable to pay any penalty/demand raised on the Employer due to default by Contractor, and the same shall be recovered/Contractor shall make good the loss. The Contractor shall be responsible for the issuance of e-way bill and other compliances relating to e-way bill as per GST law. The Employer will deduct GST at source at the applicable rates in case transactions under the contract are liable to GST deduction at source as per the prevailing provisions of GST Law. With regards to the BOCW cess :- (i) For Supply contract: if DVC deduct the BOCW cess as per statutory rules, the same will be reimbursed by DVC to the contractor. (ii) For Services Contract: DVC shall deduct the BOCW cess from the Contractor's bills and shall submit the same to the concerned statutory authorities. However, if the Contractor has already submitted BOCW cess to the concerned statutory authorities and submitted documentary evidence of the same along with the bills then the balance BOCW cess (if any) shall be deducted by DVC from the Contractor's bills and submit the same to the concerned statutory authorities.
		14.3	If any tax exemptions, reductions, allowances or privileges are available to the Contractor in the country where the Site is located, the Employer shall use its best endeavours to enable the Contractor to benefit from any such tax savings to the maximum allowable extent.
		14.4	For the purpose of the Contract, it is agreed that the Contract Price specified in Article 2 (Contract Price and Terms of Payment) of the Contract Agreement is based on the taxes, duties, levies and charges prevailing on seven (7) days prior to the deadline set for price bid submission in the country where the Site is located (hereinafter called "Tax" in this GCC Sub-Clause 14.4). If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any

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			change in interpretation or application of any Tax occurs in the course of the performance of Contract, which was or will be assessed on the Contractor in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction therefrom, as the case may be, in accordance with GCC Clause 36 (Change in Laws and Regulations) hereof. However, these adjustments shall not be applicable on procurement of raw materials, intermediary components and intermediary services etc. by the Contractor. Income Tax: As per Indian Income Tax Act & Rules, Employer is required to deduct Income Tax at source from all the payments to be made to Non-resident/Foreign Contractor. For this purpose, the Contractor shall be required to either furnish (i) the certificate from Indian Tax Authority or (ii) Ruling from "the Authority for Advance Ruling (AAR)" determining the applicable rate of Income tax in India before release of first payment.
		14.5	If the Employer orders any spare at a later date as per GCC CI 7.3, all applicable additional taxes & duties, If any, not included in the original price shall be to the account of Employer.
		14.6	The Contractor will be required to submit PAN details to the Project Manager before the submission of the first bill.
D. Intellectual Property			
15.	Copyright		
		15.1	The copyright in all drawings, documents and other materials containing data and information furnished to the Employer by the Contractor herein shall remain vested in the Contractor or, if they are furnished to the Employer directly or through the Contractor by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party. The Employer shall however be free to reproduce all drawings, documents and other material furnished to the Employer for the purpose of the contract including, if required, for operation and maintenance of the facilities.
16.	Confidential Information		
		16.1	The Employer and the Contractor shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Notwithstanding the above, the Contractor may furnish to its Subcontractor(s) such documents, data and other information it receives from the Employer to the extent required for the Subcontractor(s) to perform its work under the Contract, in which event the Contractor shall obtain from such Subcontractor(s) an undertaking of confidentiality similar to that imposed on the Contractor under this GCC Clause 16.
		16.2	The Employer shall not use such documents, data and other information received from the Contractor for any purpose other than the operation and maintenance of the Facilities. Similarly, the Contractor shall not use such documents, data and other information received from the Employer for

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			any purpose other than the design, procurement of Plant and Equipment, construction or such other work and services as are required for the performance of the Contract.
		16.3	The obligation of a party under GCC Sub-Clauses 16.1 and 16.2 above, however, shall not apply to that information which (a) now or hereafter enters the public domain through no fault of that party (b) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party hereto (c) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality. (d) is required to be disclosed in accordance with a judicial or governmental order or decree.
		16.4	The above provisions of this GCC Clause 16 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Facilities or any part thereof.
		16.5	The provisions of this GCC Clause 16 shall survive termination, for whatever reason, of the Contract.
			E. Work Execution
17.	Representatives		
		17.1	Project Manager If the Project Manager is not named in the Contract, then within fourteen (14) days of the Effective Date, the Employer shall appoint and notify the Contractor in writing of the name of the Project Manager. The Employer may from time to time appoint some other person as the Project Manager in place of the person previously so appointed, and shall give a notice of the name of such other person to the Contractor without delay. The Employer shall take reasonable care to see that no such appointment is made at such a time or in such a manner as to impede the progress of work on the Facilities. The Project Manager shall represent and act for the Employer at all times during the currency of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Project Manager, except as herein otherwise provided. All notices, instructions, information and other communications given by the Contractor to the Employer under the Contract shall be given to the Project Manager, except as herein otherwise provided.
		17.2	Contractor's Representative & Construction Manager
		17.2.1	The Contractor shall appoint the Contractor's Representative within fourteen (14) days of the Effective Date or before start of work whichever is earlier and shall request the Employer in writing to approve the person so appointed.

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			17.2.1.1 The Contractor's representative shall be a regular Employee/ Partner/ Director only and the Contractor shall be required to submit a Power of Attorney in original in favour of its representative. Notarized photocopy of the Power of Attorney shall be acceptable only if the Power of Attorney has been registered by the Contractor. The Employer may verify the photocopy of the Power of Attorney with the Original and the Contractor shall be required to produce the original Power of Attorney for verification, if required by the Employer. The relation of the Contractor's representative with the contractor such as Partner/ Employee etc. should be clearly brought out in the Power of Attorney. The Contractor would be required to submit a documentary proof of the relation of the Contractor's representative with the contractor in the form of self-attested copy of any of the following documents: i. Previous financial year's Form 16 as available at TRACES site of Income tax department, if the Contractor's representative is an employee of contractor or his Appointment Letter/ Salary Slip/ other documentary evidence (only in case of recent appointment or where Form 16 details are not uploaded at TRACES). Further, the Contractor shall submit the copy of Form 16 as available through TRACES site for every subsequent year also in respect of the Contractor's representative till the period of authorization. ii. Article of Association/ Registered Partnership Deed if the Contractor's representative is a partner or stake holder in Company. In case, the Contractor is not able to submit any of the documentary proofs as mentioned above at para (i) & (ii), he would be required to submit an affidavit stating the relationship between the Contractor's representative and the Contractor. 17.2.1.2 In case, the Contractor's representative is also doing some other Contract(s)/ Work(s) as nominee of the same contractor, the Contractor shall give a declaration citing list of all works where the Contractor's representative is the nominee. 17.2.1.3 If the Employer objects to the appointment giving the reason therefore, then the Contractor shall appoint a replacement within fourteen (14) days of such objection, and the foregoing provisions of this GCC Sub-Clause 17.2.1 shall apply thereto.
			17.2.2 The Contractor's Representative shall represent and act for the Contractor at all times during the currency of the Contract and shall give to the Project Manager all the Contractor's notices, instructions, information and all other communications under the Contract. All notices, instructions, information and all other communications given by the Employer or the Project Manager to the Contractor under the Contract shall be given to the Contractor's Representative or, in its absence, its deputy, except as herein otherwise provided. The Contractor shall not revoke the appointment of the Contractor's Representative without the Employer's prior written

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			consent, which shall not be unreasonably withheld. If the Employer consents thereto, the Contractor shall appoint some other person as the Contractor's Representative, pursuant to the procedure set out in GCC Sub-Clause 17.2.1. 17.2.3 The Contractor's Representative may, subject to the approval of the Employer (which shall not be unreasonably withheld), at any time delegate to any person any of the powers, functions and authorities vested in him or her. Any such delegation may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice signed by the Contractor's Representative, and shall specify the powers, functions and authorities thereby delegated or revoked. No such delegation or revocation shall take effect unless and until a copy thereof has been delivered to the Employer and the Project Manager. Any act or exercise by any person of powers, functions and authorities so delegated to him or her in accordance with this GCC Sub-Clause 17.2.3 shall be deemed to be an act or exercise by the Contractor's Representative. 17.2.3.1 Notwithstanding anything stated in GCC Sub-clause 17.1 and 17.2.1 above, for the purpose of execution of contract, the Employer and the Contractor shall finalise and agree to a Contract Co-ordination Procedure and all the communication under the Contract shall be in accordance with such Contract Co-ordination Procedure. 17.2.4 From the commencement of installation of the Facilities at the Site until Operational Acceptance, the Contractor's Representative shall appoint a suitable person as the construction manager (hereinafter referred to as "the Construction Manager"). The Construction Manager shall supervise all work done at the Site by the Contractor and shall be present at the Site throughout normal working hours except when on leave, sick or absent for reasons connected with the proper performance of the Contract. Whenever the Construction Manager is absent from the Site, a suitable person shall be appointed to act as his or her deputy. 17.2.5 The Employer may by notice to the Contractor object to any representative or person employed by the Contractor in the execution of the Contract who, in the reasonable opinion of the Employer, may behave inappropriately, may be incompetent or negligent, or may commit a serious breach of the Site regulations provided under GCC Sub-Clause 22.3. The Employer shall provide evidence of the same, whereupon the Contractor shall remove such person from the Facilities. 17.2.6 If any representative or person employed by the Contractor is removed in accordance with GCC Sub-Clause 17.2.5, the Contractor shall, where required, promptly appoint a replacement. 17.2.7 In case any of the information/ declaration/ undertaking provided by Contractor/Contractor's representative is found to be false and/ or the Contractor/ Contractor's representative suppresses any relevant information at any stage, the Contractor will be liable for actions in terms of Employer's Debarment policy.

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18.	Work Program		
		18.1	Contractor’s Organization The Contractor shall supply to the Employer and the Project Manager a chart showing the proposed organization to be established by the Contractor for carrying out work on the Facilities. The chart shall include the identities of the key personnel together with the curricula vitae of such key personnel to be employed within twenty-one (21) days of the Effective Date. The Contractor shall promptly inform the Employer and the Project Manager in writing of any revision or alteration of such an organization chart.
		18.2	Program of Performance Within twenty-eight (28) days after the date of notification of award of Contract, the Contractor shall prepare and submit to the Project Manager a detailed program of performance of the Contract, made in the form of PERT Network and showing the sequence in which it proposes to design, manufacture, transport, assemble, install and pre-commission the Facilities, as well as the date by which the Contractor reasonably requires that the Employer shall have fulfilled its obligations under the Contract so as to enable the Contractor to execute the Contract in accordance with the program and to achieve Completion and Acceptance of the Facilities in accordance with the Contract. The program so submitted by the Contractor shall accord with the Time Schedule included in Appendix 4 (Time Schedule) to the Contract Agreement and any other dates and periods specified in the Contract. The Contractor shall update and revise the program as and when appropriate or when required by the Project Manager, but without modification in the Times for Completion given in the SCC and any extension granted in accordance with GCC Clause 40, and shall submit all such revisions to the Project Manager.
		18.3	Progress Report The Contractor shall monitor progress of all the activities specified in the program referred to in GCC Sub-Clause 18.2 (Program of Performance) above, and submit a progress report to the Project Manager every month. The progress report shall be in a form acceptable to the Project Manager and shall also indicate: (a) percentage completion achieved compared with the planned percentage completion for each activity; and (b) where any activity is behind the program, giving comments and likely consequences and stating the corrective action being taken.
		18.4	Progress of Performance If at any time the Contractor's actual progress falls behind the program referred to in GCC Sub-Clause 18.2 (Program of Performance), or it becomes apparent that it will so fall behind, the Contractor shall, at the request of the Employer or the Project Manager, prepare and submit to the Project Manager a revised program, taking into account the prevailing circumstances, and shall notify the Project Manager of the steps being taken to expedite progress so as to attain Completion of the Facilities within the Time for Completion under GCC Sub-Clause 8.2 (Time for Commencement and Completion), any extension thereof entitled under GCC Sub-Clause 40.1 (Extension of Time for Completion), or any

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			extended period as may otherwise be agreed upon between the Employer and the Contractor.
		18.5	Work Procedures The Contract shall be executed in accordance with the Contract Documents and the procedures given in the section on Forms and Procedures of the Contract Documents. If agreed between the Employer and the Contractor, the Contractor may execute the Contract in accordance with its own standard project execution plans and procedures to the extent that they do not conflict with the provisions contained in the Contract.
		18.6	Maintenance of Records of Weekly Progress Review Meetings at site The Contractor shall be required to attend all weekly site progress review meetings organized by the 'Project Manager' or his authorized representative. The deliberations in the meetings shall inter alia include the weekly program, progress of work (including details of manpower, tools and plants deployed by the contractor vis-a-vis agreed schedule), inputs to be provided by Employer, delays, if any, and recovery program, specific hindrances to work and work instructions by Employer. Record of Hindrances / events that lead to slow/ stoppage of smooth execution of work shall be maintained in "Hindrance Register". The minutes of the weekly meetings shall be recorded in triplicate in a numbered register available with the 'Project Manager', or his authorized representative. These recordings shall be jointly signed by the Project Manager or his authorized representative and the Contractor and one copy of the signed records shall be handed over to the Contractor.
19.	Subcontracting		
		19.1	Appendix 5 (List of Approved Subcontractors) to the Contract Agreement specifies major items of supply or services and a list of approved Subcontractors against each item, including vendors. Insofar as no Subcontractors are listed against any such item, the Contractor shall prepare a list of Subcontractors for such item for inclusion in such list. The Contractor may from time to time propose any addition to or deletion from any such list. The Contractor shall submit any such list or any modification thereto to the Employer for its approval in sufficient time so as not to impede the progress of work on the Facilities. Such approval by the Employer for any of the Subcontractors shall not relieve the Contractor from any of its obligations, duties or responsibilities under the Contract.
		19.2	The Contractor shall select and employ its Subcontractors for such major items from those listed in the lists referred to in GCC Sub-Clause 19.1.
		19.3	For items or parts of the Facilities not specified in Appendix 5 (List of Approved Subcontractors) to the Contract Agreement, the Contractor may employ such Subcontractors as it may select, at its discretion.
		19.4	The Contractor shall not be allowed to sub-contract works to any subcontractor/ sub-vendor from a country which shares a land border with India unless such sub-contractor is registered with the competent Authority.

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			The Competent Authority for the purpose of registration shall be as mentioned in the Annexure-VI of SCC. However, the said requirement of registration will not apply to subcontractors from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects. The Contractor may apprise itself of the updated lists of such countries available in the website of the Ministry of External Affairs. Procurement of raw material, components, etc. does not constitute subcontracting.
20.	Design And Engineering		
		20.1	Specifications and Drawings 20.1.1 The Contractor shall execute the basic and detailed design and the engineering work in compliance with the provisions of the Contract, or where not so specified, in accordance with good engineering practice. The Contractor shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents that it has prepared, whether such specifications, drawings and other documents have been approved by the Project Manager or not, provided that such discrepancies, errors or omissions are not because of inaccurate information furnished in writing to the Contractor by or on behalf of the Employer. 20.1.2 The Contractor shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designated by or on behalf of the Employer, by giving a notice of such disclaimer to the Project Manager.
		20.2	Codes and Standards Wherever references are made in the Contract to codes and standards in accordance with which the Contract shall be executed, the edition or the revised version of such codes and standards current at the date fifteen (15) days prior to deadline set for price bid submission shall apply unless otherwise specified. During Contract execution, any changes in such codes and standards shall be applied after approval by the Employer and shall be treated in accordance with GCC Clause 39 (Changes Originating from Contractor).
		20.3	Approval/Review of Technical Documents by Project Manager 20.3.1 The Contractor shall prepare (or cause its Subcontractors to prepare) and furnish to the Project Manager the documents listed in Appendix 7 (List of Documents for Approval or Review) to the Contract Agreement for its approval or review as specified and as in accordance with the requirements of GCC Sub-Clause 18.2 (Program of Performance).

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			Any part of the Facilities covered by or related to the documents to be approved by the Project Manager shall be executed only after the Project Manager's approval thereof. GCC Sub-Clauses 20.3.2 through 20.3.7 shall apply to those documents requiring the Project Manager's approval, but not to those furnished to the Project Manager for its review only. 20.3.2 Within twenty one (21) days after receipt by the Project Manager of any document requiring the Project Manager's approval in accordance with GCC Sub-Clause 20.3.1, the Project Manager shall either return one copy thereof to the Contractor with its approval endorsed thereon or shall notify the Contractor in writing of its disapproval thereof and the reasons therefor and the modifications that the Project Manager proposes. 20.3.3 The Project Manager shall not disapprove any document, except on the grounds that the document does not comply with some specified provision of the Contract or that it is contrary to good engineering practice. 20.3.4 If the Project Manager disapproves the document, the Contractor shall modify the document and resubmit it for the Project Manager's approval in accordance with GCC Sub-Clause 20.3.2. If the Project Manager approves the document subject to modification(s), the Contractor shall make the required modification(s), and upon resubmission with the required modifications the document shall be deemed to have been approved. The procedure for submission of the documents by the Contractor and their approval by the Project Manager shall be discussed and finalised with the Contractor. 20.3.5 Deleted. 20.3.6 The Project Manager's approval, with or without modification of the document furnished by the Contractor, shall not relieve the Contractor of any responsibility or liability imposed upon it by any provisions of the Contract except to the extent that any subsequent failure results from modifications required by the Project Manager. 20.3.7 The Contractor shall not depart from any approved document unless the Contractor has first submitted to the Project Manager an amended document and obtained the Project Manager's approval thereof, pursuant to the provisions of this GCC Sub-Clause 20.3. If the Project Manager requests any change in any already approved document and/or in any document based thereon, the provisions of GCC Clause 39 (Change in the Facilities) shall apply to such request.
21.	Procurement		
	21.1	Plant and Equipment	

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			Subject to GCC Sub-Clause 14.2, the Contractor shall manufacture or procure and transport all the Plant and Equipment in an expeditious and orderly manner to the Site.
		21.2	Employer-Supplied Plant, Equipment, and Materials If Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement provides that the Employer shall furnish any specific items of machinery, equipment or materials to the Contractor, the following provisions shall apply: 21.2.1 The Employer shall, at its own risk and expense, transport each item to the place on or near the Site as agreed upon by the parties and make such item available to the Contractor at the time specified in the program furnished by the Contractor, pursuant to GCC Sub-Clause 18.2 (Program of Performance), unless otherwise mutually agreed. 21.2.2 Upon receipt of such item, the Contractor shall inspect the same visually and notify the Project Manager of any detected shortage, defect or default. The Employer shall immediately remedy any shortage, defect or default, or the Contractor shall, if practicable and possible, at the request of the Employer, remedy such shortage, defect or default at the Employer's cost and expense. After inspection, such item shall fall under the care, custody and control of the Contractor. The provision of this GCC Sub-Clause 21.2.2 shall apply to any item supplied to remedy any such shortage or default or to substitute for any defective item, or shall apply to defective items that have been repaired. 21.2.3 The foregoing responsibilities of the Contractor and its obligations of care, custody and control shall not relieve the Employer of liability for any undetected shortage, defect or default, nor place the Contractor under any liability for any such shortage, defect or default whether under GCC Clause 27 (Defect Liability) or under any other provision of Contract.
		21.3	Transportation 21.3.1 The Contractor shall at its own risk and expense transport all the Plant and Equipment and the Contractor's Equipment to the Site by the mode of transport that the Contractor judges most suitable under all the circumstances. Packing Material The Contractor shall ensure that all the plant and equipment are suitably packed and protected to prevent damage or deterioration during its transportation to site, handling and storage at site till the time of its installation. The ownership of all such packing material (except empty shipper's containers on which the customs duty has been paid by the Contractor pursuant to GCC Clause 14.2) shall stand transferred to the Employer upon dispatch of the plant and equipment and endorsement of dispatch documents in favour of the Employer. 21.3.2 Unless otherwise provided in the Contract, the Contractor shall be entitled to select any safe mode of transport operated by any

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			person to carry the Plant and Equipment and the Contractor's Equipment. In case, the Contractor decides to transport the Plant and Equipment and the Contractor's Equipment by road, then such Plant and Equipment and the Contractor's Equipment must necessarily be transported through a registered common carrier as per Carriage by Road Rules 2011 of Central Government of India. 21.3.3 Upon despatch of each shipment of the Plant and Equipment and the Contractor's Equipment, the Contractor shall notify the Employer of the description of the Plant and Equipment and of the Contractor's Equipment, the point and means of dispatch, and the estimated time and point of arrival in the country where the Site is located, if applicable, and at the Site. The Contractor shall furnish the Employer with relevant shipping documents to be agreed upon between the parties. 21.3.4 The Contractor shall be responsible for obtaining, if necessary, approvals from the authorities for transportation of the Plant and Equipment and the Contractor's Equipment to the Site. The Employer shall use its best endeavours in a timely and expeditious manner to assist the Contractor in obtaining such approvals, if requested by the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any claim for damage to roads, bridges or any other traffic facilities that may be caused by the transport of the Plant and Equipment and the Contractor's Equipment to the Site. 21.4 Customs Clearance The Contractor shall, at its own expense, handle all imported Plant and Equipments and spares and Contractor's Equipments at the point(s) of import and shall handle any formalities for customs clearance, subject to the Employer's obligations under GCC Sub Clause 14.2, provided that if applicable laws or regulations require any application or act to be made by or in the name of the Employer, the Employer shall take all necessary steps to comply with such laws or regulations. In the event of delays in customs clearance due to fault of the Employer, the Contractor shall be entitled to an Extension in the Time for Completion, pursuant to GCC Clause 40.
22.	Installation		
		22.1	Setting Out/Supervision/Labour 22.1.1 Bench Mark: The Contractor shall be responsible for the true and proper setting-out of the Facilities in relation to bench marks, reference marks and lines provided to it in writing by or on behalf of the Employer. If, at any time during the progress of installation of the Facilities, any error shall appear in the position, level or alignment of the Facilities, the Contractor shall forthwith notify the Project Manager of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the Project

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			Manager. If such error is based on incorrect data provided in writing by or on behalf of the Employer, the expense of rectifying the same shall be borne by the Employer. 22.1.2 Contractor's Supervision: The Contractor shall give or provide all necessary superintendence during the installation of the Facilities, and the Construction Manager or its deputy shall be constantly on the Site to provide full-time superintendence of the installation. The Contractor shall provide and employ only technical personnel who are skilled and experienced in their respective callings and supervisory staff who are competent to adequately supervise the work at hand. 22.1.3 Labour: (a) The Contractor shall provide and employ on the Site in the installation of the Facilities such skilled, semi-skilled and unskilled labour as is necessary for the proper and timely execution of the Contract. The Contractor shall preferably engage skilled/ semiskilled/ unskilled workers from amongst the land oustees of the Project. (b) Unless otherwise provided in the Contract, the Contractor shall be responsible for the recruitment, transportation, accommodation and catering of all labour, local or expatriate, required for the execution of the Contract and for all payments in connection therewith. (c) The Contractor shall be responsible for obtaining all necessary permit(s) and/or visa(s) from the appropriate authorities for the entry of all labour and personnel to be employed on the Site into the country where the Site is located. (d) The Contractor shall at its own expense provide the means of repatriation to all of its and its Subcontractor's personnel employed on the Contract at the Site to their various home countries. It shall also provide suitable temporary maintenance of all such persons from the cessation of their employment on the Contract to the date programmed for their departure. In the event that the Contractor defaults in providing such means of transportation and temporary maintenance, the Employer may provide the same to such personnel and recover the cost of doing so from the Contractor. (e) The Contractor shall at all times during the progress of the Contract use its best endeavour to prevent any unlawful, riotous or disorderly conduct or behaviour by or amongst its employees and the labour of its Subcontractors. (f) The Contractor shall, in all dealings with its labour and the labour of its Subcontractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labour.

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		22.2	Contractor's Equipment 22.2.1 All Contractors' Equipment brought by the Contractor onto the Site shall be deemed to be intended to be used exclusively for the execution of the Contract. The Contractor shall not remove the same from the Site without the Project Manager's consent that such Contractor's Equipment is no longer required for the execution of the Contract. 22.2.2 Unless otherwise specified in the Contract, upon completion of the Facilities, the Contractor shall remove from the Site all Equipment brought by the Contractor onto the Site and any surplus materials remaining thereon. 22.2.3 The Employer will, if requested, use its best endeavour to assist the Contractor in obtaining any local, state or national government permission required by the Contractor for the export of the Contractor's Equipment imported by the Contractor for use in the execution of the Contract that is no longer required for the execution of the Contract.
		22.3	Site Regulations and Safety 22.3.1 The Employer and the Contractor shall establish Site regulations setting out the rules to be observed in the execution of the Contract at the Site and shall comply therewith. The Contractor shall prepare and submit to the Employer, with a copy to the Project Manager, proposed Site regulations for the Employer's approval, which approval shall not be unreasonably withheld. Such Site regulations shall include, but shall not be limited to, rules in respect of security, safety of the Facilities in line with para 22.3.2, gate control, sanitation, medical care, and fire prevention. 22.3.2 The Employer has formulated Safety Rules for Construction & Erection of Power Plants and is enclosed at Annexure-B to GCC. These Safety Rules lay down the safety requirements for safe execution of project activities, responsibilities of the Contractor, and all concerned involved in Construction and Erection. The Contractor, including his sub-contractors, while executing the Works, shall strictly comply with these Safety rules and statutory requirements (including amendments thereof), as applicable, in respect of safety of personnel, equipment and materials at site area under execution of the Contractor. 22.3.3 In addition to other clauses specified in 'NTPC Safety Rules adopted by DVC for Construction and Erection of Power Plants' [as enclosed with GCC], Contractor shall adhere to the following provisions for payment linked to Safety Compliances as specified in Payment Terms: i) Safety Personnel Contractor shall adhere to the requirements of Clause 2.3 (requirement of Safety personnel) of 'NTPC Safety Rules adopted by DVC for Construction and Erection of Power Plants'.

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	ii) Personal Protective Equipment & Safety Equipment Contractor shall adhere to the requirements of Clause 4 (Personal Protective Equipment) of 'NTPC Safety Rules adopted by DVC for Construction and Erection of Power Plants' and the provisions of the Bidding Documents with regards to number of Safety Equipment/PPEs to be provided by the Contractor. In case Contractor fails to comply with aforesaid requirement, Project Manager /Safety Officer shall issue a warning letter/Non-compliance Memo to the Contractor regarding the same advising him to take corrective action. Project Manager /Employer's Safety Officer shall maintain written record of all such incidents when Warning letter/Non-compliance Memo is issued to the Contractor for not meeting the requirements of Clause 4.0 (Personal Protective Equipment) and the provisions of the Bidding Documents. iii) Safety Induction and Training Contractor shall adhere to the requirements of imparting Safety training as per Clause 8.0 (Safety Induction and Training) of 'NTPC Safety Rules adopted by DVC for Construction and Erection of Power Plants. Contractor shall maintain written record of Safety trainings imparted to its Employees/ workmen for purpose of aforesaid payment. These records shall be available for review of Project Manager /Employer's Safety Officer all the time. iv) Medical and First Aid Amenities Contractor shall adhere to the requirements of Clause 13 (Medical and First Aid Amenities) of 'NTPC Safety Rules adopted by DVC for Construction and Erection of Power Plants. Employer's Safety Officer/ Project Manager shall maintain written record of incidences when requisite Medical and first aid amenities as per Clause 13 of Safety Rules were not available for purpose of aforesaid payment. v) Compliance to Work Permit System Contractor shall adhere to the requirements of Clause 17 (Work Permit System) of 'NTPC Safety Rules adopted by DVC for Construction and Erection of Power Plants'. In case Contractor fails to obtain work permit or fails to comply to any requirements of aforesaid Work permit system, he will be issued a warning letter/Non-compliance Memo by Project Manager /Safety Officer of Employer regarding the same advising him to take corrective action.

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			Employer's Safety Officer / Project Manager shall maintain written record of all such incidents when Warning letter / Non-compliance Memo is issued to Contractor for not complying with the requirements of Work Permit System as per Clause 17 of Safety Rules for purpose of aforesaid payment.
		22.4	Opportunities for Other Contractors 22.4.1 The Contractor shall, upon written request from the Employer or the Project Manager, give all reasonable opportunities for carrying out the work to any other contractors employed by the Employer on or near the Site. 22.4.2 If the Contractor, upon written request from the Employer or the Project Manager, makes available to other contractors any roads or ways the maintenance for which the Contractor is responsible, permits the use by such other contractors of the Contractor's Equipment, or provides any other service of whatsoever nature for such other contractors, the Employer shall fully compensate the Contractor for any loss or damage caused or occasioned by such other contractors in respect of any such use or service, and shall pay to the Contractor reasonable remuneration for the use of such equipment or the provision of such services. 22.4.3 The Contractor shall also so arrange to perform its work as to minimize, to the extent possible, interference with the work of other contractors. The Project Manager shall determine the resolution of any difference or conflict that may arise between the Contractor and other contractors and the workers of the Employer in regard to their work. 22.4.4 The Contractor shall notify the Project Manager promptly of any defects in the other Contractors' work that come to its notice, and that could affect the Contractor's work. The Project Manager shall determine the corrective measures, if any, required to rectify the situation after inspection of the Facilities. Decisions made by the Project Manager shall be binding on the Contractor.
		22.5	Emergency Work If, by reason of an emergency arising in connection with and during the execution of the Contract, any protective or remedial work is necessary as a matter of urgency to prevent damage to the Facilities, the Contractor shall immediately carry out such work. If the Contractor is unable or unwilling to do such work immediately, the Employer may do or cause such work to be done as the Employer may determine is necessary in order to prevent damage to the Facilities. In such event the Employer shall, as soon as practicable after the occurrence of any such emergency, notify the Contractor in writing of such emergency, the work done and the reasons therefor. If the work done or caused to be done by the Employer is work that the Contractor was liable to do at its own expense under the Contract, the reasonable costs incurred by the Employer in connection therewith shall be paid by the Contractor to the Employer. Otherwise, the cost of such remedial work shall be borne by the Employer.

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		22.6	Site Clearance 22.6.1 Site Clearance in Course of Performance: In the course of carrying out the Contract, the Contractor shall keep the Site reasonably free from all unnecessary obstruction, store or remove any surplus materials, clear away any wreckage, rubbish or temporary works from the Site, and remove any Contractor's Equipment no longer required for execution of the Contract. 22.6.2 Clearance of Site after Completion: After Completion of all parts of the Facilities, the Contractor shall clear away and remove all wreckage, rubbish and debris of any kind from the Site, and shall leave the Site and Facilities clean and safe. 22.6.3 Disposal of Scrap The Contractor shall with the agreement of the Employer promptly remove from the site any 'Scrap' generated during performance of any activities at site in pursuance of the Contract. The term 'Scrap' shall refer to scrap/ waste/ remnants arising out of the fabrication of structural steel work and piping work at the project site in the course of execution of the contract and shall also include any wastage of cables during the termination process while installing the cables. The ownership of such Scrap shall vest with the Contractor except in cases where the items have been issued by the Employer from its stores for their installation only without any adjustment to the Contract Price. The removal of scrap shall be subject to the Contractor producing the necessary clearance from the relevant authorities (Custom, GST etc.), if required by the law, in respect of disposal of the scrap. The liability for the payment of the applicable taxes/duties shall be that of the Contractor. The Contractor shall also indemnify to keep the Employer harmless from any act of omission or negligence on the part of the Contractor in following the statutory requirements with regard to removal/disposal of scrap. The Indemnity-cum-Undertaking Agreement shall be furnished by Contractor as per proforma enclosed in Section-VII (Forms and Procedure). Further, in case the laws require the Employer to take prior permission of the relevant Authorities before handing over the scrap to the Contractor, the same shall be obtained by the Contractor on behalf of the Employer.
		22.7	Watching and Lighting The Contractor shall provide and maintain at its own expense all lighting, fencing, and watching when and where necessary for the proper execution and the protection of the Facilities, or for the safety of the owners and occupiers of adjacent property and for the safety of the public.
		22.8	Shift Work 22.8.1 To achieve the required rate of progress in order to complete the Facilities within the Time for Completion, the Contractor may carry on the work, round the clock, in multiple shifts per day, as may be necessary. The

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		22.8.2	Contractor shall however be responsible to comply with all applicable laws in this regard.
		22.8.3	No additional payment will be made on account of round the clock working in multiple shifts.
			Wherever the work is carried out at night adequate lighting of working areas and access routes for pedestrians or vehicles shall be provided by the Contractor at his cost. Sufficient notice should be given by the Contractor to the Employer regarding the details of works in shifts so that necessary supervision could be provided.
23.	Test And Inspection		
		23.1	The Contractor shall at its own expense carry out at the place of manufacture and/or on the Site all such tests and/or inspections of the Plant and Equipment and any part of the Facilities as are specified in the Contract.
		23.2	The Employer and the Project Manager or their designated representatives shall be entitled to attend the aforesaid test and/or inspection, provided that the Employer shall bear all costs and expenses incurred in connection with such attendance including, but not limited to, all travelling and board and lodging expenses.
		23.3	Whenever the Contractor is ready to carry out any such test and/or inspection, the Contractor shall give a reasonable advance notice of such test and/or inspection and of the place and time thereof to the Project Manager. The Contractor shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Employer and the Project Manager (or their designated representatives) to attend the test and/or inspection.
		23.4	The Contractor shall provide the Project Manager with a certified report of the results of any such test and/or inspection. If the Employer or Project Manager (or their designated representatives) fails to attend the test and/or inspection, or if it is agreed between the parties that such persons shall not do so, then the Contractor may proceed with the test and/or inspection in the absence of such persons, and may provide the Project Manager with a certified report of the results thereof.
		23.5	The Project Manager may require the Contractor to carry out any test and/or inspection not required by the Contract, where the purpose of these tests/ inspection is to verify compliance with the Technical Specifications and are feasible without creating a risk of damage to the Works, provided that the Contractor's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of work on the Facilities and/or the Contractor's performance of its other obligations under the Contract, due allowance will be made in respect of the Time for Completion and the other obligations so affected.
		23.6	If any Plant and Equipment or any part of the Facilities fails to pass any test and/or inspection, the Contractor shall either rectify or replace such

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			Plant and Equipment or part of the Facilities and shall repeat the test and/or inspection upon giving a notice under GCC Sub-Clause 23.3.
		23.7	Deleted.
		23.8	The Contractor shall afford the Employer and the Project Manager, at the Employer's expense, access at any reasonable time to any place where the Plant and Equipment are being manufactured or the Facilities are being installed, in order to inspect the progress and the manner of manufacture or installation, provided that the Project Manager shall give the Contractor a reasonable prior notice.
		23.9	The Contractor agrees that neither the execution of a test and/or inspection of Plant and Equipment or any part of the Facilities, nor the attendance by the Employer or the Project Manager, nor the issue of any test certificate pursuant to GCC Sub-Clause 23.4, shall release the Contractor from any other responsibilities under the Contract.
		23.10	No part of the Facilities or foundations shall be covered up on the Site without the Contractor carrying out any test and/or inspection required under the Contract. The Contractor shall give a reasonable notice to the Project Manager whenever any such part of the Facilities or foundations are ready or about to be ready for test and/or inspection; such test and/or inspection and notice thereof shall be subject to the requirements of the Contract.
		23.11	The Contractor shall uncover any part of the Facilities or foundations, or shall make openings in or through the same as the Project Manager may from time to time require at the Site, and shall reinstate and make good such part or parts. If any part of the Facilities or foundations have been covered up at the Site after compliance with the requirement of GCC Sub-Clause 23.10 and are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating, and making good the same shall be borne by the Employer, and the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been delayed or impeded in the performance of any of its obligations under the Contract.
24.	Completion of the Facilities		
		24.1	As soon as installation of the Facilities or any part thereof has, in the opinion of the Contractor, been completed as specified in the Technical Specifications, excluding minor items not materially affecting the operation or safety of the Facilities, the Contractor shall so notify the Employer in writing.
		24.2	Within seven (7) days after receipt of the notice from the Contractor under GCC Sub-Clause 24.1, the Employer shall supply the operating and maintenance personnel and the raw materials, utilities, lubricants, chemicals, catalysts, facilities, services as specified in Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement, required for Pre-commissioning of the Facilities or any part thereof.
		24.3	As soon as reasonably practicable after the operating and maintenance personnel have been supplied by the Employer and the raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other

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			matters, if so specified in Appendix 6 (Scope of Works and Supply by the Employer)/ Technical Specifications, have been provided by the Employer in accordance with GCC Sub-Clause 24.2, the Contractor shall commence Pre-commissioning of the Facilities or the relevant part thereof in preparation for Commissioning.
		24.4	As soon as all works in respect of Pre-commissioning are completed and, in the opinion of the Contractor, the Facilities or any part thereof is ready for Commissioning, the Contractor shall commence Commissioning as per procedures stipulated in Technical Specifications, and as soon as Commissioning is satisfactorily completed, the Contractor shall so notify the Project Manager in writing.
		24.5	The Project Manager shall, within fourteen (14) days after receipt of the Contractor's notice under GCC Sub-Clause 24.4, either issue a Completion Certificate in the form specified in the Forms and Procedures section in the bidding documents, stating that the Facilities or that part thereof have reached Completion as at the date of the Contractor's notice under GCC Sub-Clause 24.4, or notify the Contractor in writing of any defects and/or deficiencies. If the Project Manager notifies the Contractor of any defects and/or deficiencies, the Contractor shall then correct such defects and/or deficiencies, and shall repeat the procedure described in GCC Sub-Clause 24.4. If the Project Manager is satisfied that the Facilities or that part thereof have reached Completion, the Project Manager shall, within seven (7) days after receipt of the Contractor's repeated notice, issue a Completion Certificate stating that the Facilities or that part thereof have reached Completion as at the date of the Contractor's repeated notice. If the Project Manager is not so satisfied, then it shall notify the Contractor in writing of any defects and/or deficiencies within seven (7) days after receipt of the Contractor's repeated notice, and the above procedure shall be repeated.
		24.6	If the Project Manager fails to issue the Completion Certificate and fails to inform the Contractor of any defects and/or deficiencies within fourteen (14) days after receipt of the Contractor's notice under GCC Sub-Clause 24.4 or within seven (7) days after receipt of the Contractor's repeated notice under GCC Sub-Clause 24.5, or if the Employer makes use of the Facilities or part thereof, then the Facilities or that part thereof shall be deemed to have reached Completion as of the date of the Contractor's notice or repeated notice, or as of the Employer's use of the Facilities, as the case may be.
		24.7	As soon as possible after Completion, the Contractor shall complete all outstanding minor items so that the Facilities are fully in accordance with the requirements of the Contract, failing which the Employer will undertake such completion and deduct the costs thereof from any monies owing to the Contractor.
		24.8	Upon Completion, the Employer shall be responsible for the care and custody of the Facilities or the relevant part thereof, together with the risk of loss or damage thereto, and shall thereafter take over the Facilities or the relevant part thereof.

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25.	Commissioning, Guarantee Tests and Operational Acceptance		
		25.1	Commissioning 25.1.1 Commissioning of the Facilities or any part thereof shall be completed by the Contractor as per procedures detailed in the Technical Specifications. The Employer shall, unless otherwise specified in Appendix 6 (Scope of Works and Supply by the Employer)/ Technical Specifications, supply the operating and maintenance personnel and all raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters required for Commissioning of the Facilities.
		25.2	Guarantee Test 25.2.1 The Guarantee Test (and repeats thereof) shall be conducted by the Contractor as specified in the Technical Specifications or the relevant part thereof to ascertain whether the Facilities or the relevant part can attain the Functional Guarantees specified in the Contract Documents. The Contractor's and Project Manager's advisory personnel shall attend the Guarantee Test. The Employer shall promptly provide the Contractor with such information as the Contractor may reasonably require in relation to the conduct and results of the Guarantee Test (and any repeats thereof). 25.2.2 If for reasons attributable to the Employer, the Guarantee Test of the Facilities or the relevant part thereof cannot be successfully completed within the timelines specified in the Technical Specifications, payment of Contractor shall be released as specified in Appendix-I (Payment terms). 25.2.3 If for reasons attributable to the Employer, the Guarantee Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of twelve months from the timelines specified in the Technical Specifications, balance payment towards Guarantee Test, shall be released to the Contractor against Bank Guarantee as per Appendix-I (Payment terms). Such Bank Guarantee shall have initial validity of one (1) year. The Bank Guarantee shall be extended for any subsequent period, if required, such that the same remains valid till the Successful Completion of Guarantee Test.
		25.3	Operational Acceptance 25.3.1 Subject to GCC Sub-Clause 25.4 (Partial Acceptance) below, Operational Acceptance shall occur in respect of the Facilities or any part thereof when any minor items mentioned in GCC Sub-Clause 24.7 hereof relevant to the Facilities or that part thereof have been completed and (a) the Guarantee Test has been successfully completed and the Functional Guarantees are met; or (b) the Contractor has paid the liquidated damages specified in GCC Sub-Clause 28.3 hereof; and

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			25.3.2 At any time after any of the events set out in GCC Sub-Clause 25.3.1 have occurred, the Contractor may give a notice to the Project Manager requesting the issue of an Operational Acceptance Certificate in the form provided in the Bidding Documents or in another form acceptable to the Employer in respect of the Facilities or the part thereof specified in such notice as at the date of such notice. 25.3.3 The Project Manager shall, after consultation with the Employer, and within forty five (45) days after receipt of the Contractor's notice, issue an Operational Acceptance Certificate. 25.3.4 If within forty five (45) days after receipt of the Contractor's notice, the Project Manager fails to issue the Operational Acceptance Certificate or fails to inform the Contractor in writing of the justifiable reasons why the Project Manager has not issued the Operational Acceptance Certificate, the Facilities or the relevant part thereof shall be deemed to have been accepted as at the date of the Contractor's said notice.
		25.4	Partial Acceptance
			25.4.1 If the Contract specifies that Completion and Commissioning shall be carried out in respect of parts of the Facilities, the provisions relating to Completion and Commissioning including the Guarantee Test shall apply to each such part of the Facilities individually, and the Operational Acceptance Certificate shall be issued accordingly for each such part of the Facilities. 25.4.2 If a part of the Facilities comprises facilities such as buildings, for which no Commissioning or Guarantee Test is required, then the Project Manager shall issue the Operational Acceptance Certificate for such facility when it attains Completion, provided that the Contractor shall thereafter complete any outstanding minor items that are listed in the Operational Acceptance Certificate.
			F. Guarantees and Liabilities
26.	Completion Time Guarantee		
		26.1	The Contractor guarantees that it shall attain Completion of the Facilities (or a part for which a separate time for completion is specified in the SCC) within the Time for Completion specified in the SCC pursuant to GCC Sub-Clause 8.2, or within such extended time to which the Contractor shall be entitled under GCC Clause 40 (Extension of Time for Completion) hereof.
		26.2	If the Contractor fails to attain Completion of the Facilities or any part thereof within the Time for Completion or any extension thereof under GCC Clause 40 (Extension of Time for Completion), the Contractor shall pay to the Employer liquidated damages in the amount computed at the rates specified in the SCC. The aggregate amount of such liquidated damages shall in no event exceed the amount specified as "Maximum" in the SCC. Once the "Maximum" is reached, the Employer may consider termination of the Contract, pursuant to GCC Sub-Clause 42.2.2.

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			Such payment shall completely satisfy the Contractor's obligation to attain Completion of the Facilities or the relevant part thereof within the Time for Completion or any extension thereof under GCC Clause 40 (Extension of Time for Completion). The Contractor shall have no further liability whatsoever to the Employer in respect thereof. However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the Facilities or from any other obligations and liabilities of the Contractor under the Contract. Save for liquidated damages payable under this GCC Sub-Clause 26.2, the failure by the Contractor to attain any milestone or other act, matter or thing by any date specified in Appendix 4 (Time Schedule) to the Contract Agreement and/or other program of work prepared pursuant to GCC Clause 18 (Program of Performance) shall not render the Contractor liable for any loss or damage thereby suffered by the Employer.
		26.3	No bonus shall be given for earlier completion of the facilities or part thereof.
27.	Defect Liability		
		27.1	The Contractor warrants that the Facilities or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the Plant and Equipment supplied and of the work executed.
		27.2	The Defect Liability Period shall be eighteen (18) months from the date of Completion of the Facilities (or any part thereof) or twelve (12) months from the date of Operational Acceptance of the Facilities (or any part thereof), whichever first occurs, unless specified otherwise in the SCC. If during the Defect Liability Period any defect should be found in the design, engineering, materials and workmanship of the Plant and Equipment supplied or of the work executed by the Contractor, the Contractor shall promptly, in consultation and agreement with the Employer regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as the Contractor shall, at its discretion, determine) such defect as well as any damage to the Facilities caused by such defect. The Contractor shall not be responsible for the repair, replacement or making good of any defect or of any damage to the Facilities arising out of or resulting from any of the following causes: (a) improper operation or maintenance of the Facilities by the Employer (b) operation of the Facilities outside specifications provided in the Contract (c) normal wear and tear.
		27.3	The Contractor's obligations under this GCC Clause 27 shall not apply to (a) any materials that are supplied by the Employer under GCC Sub-Clause 21.2 (Employer-Supplied Plant, Equipment and Materials), are normally consumed in operation, or have a normal life shorter than the Defect Liability Period stated herein

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			(b) any designs, specifications or other data designed, supplied or specified by or on behalf of the Employer or any matters for which the Contractor has disclaimed responsibility herein (c) any other materials supplied or any other work executed by or on behalf of the Employer, except for the work executed by the Employer under GCC Sub-Clause 27.7.
		27.4	The Employer shall give the Contractor a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Employer shall afford all reasonable opportunity for the Contractor to inspect any such defect.
		27.5	The Employer shall afford the Contractor all necessary access to the Facilities and the Site to enable the Contractor to perform its obligations under this GCC Clause 27. The Contractor may, with the consent of the Employer, remove from the Site any Plant and Equipment or any part of the Facilities that are defective if the nature of the defect, and/or any damage to the Facilities caused by the defect, is such that repairs cannot be expeditiously carried out at the Site.
		27.6	If the repair, replacement or making good is of such a character that it may affect the efficiency of the Facilities or any part thereof, the Employer may give to the Contractor a notice requiring that tests of the defective part of the Facilities shall be made by the Contractor immediately upon completion of such remedial work, whereupon the Contractor shall carry out such tests. If such part fails the tests, the Contractor shall carry out further repair, replacement or making good (as the case may be) until that part of the Facilities passes such tests. The tests in character shall in any case be not less than what has already been agreed by the Employer and the Contractor for the original equipment/part of the Facilities.
		27.7	If the Contractor fails to commence the work necessary to remedy such defect or any damage to the Facilities caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Employer may, following notice to the Contractor, proceed to do such work, and the reasonable costs incurred by the Employer in connection therewith shall be paid to the Employer by the Contractor or may be deducted by the Employer from any monies due to the Contractor or claimed under the Performance Security.
		27.8	If the Facilities or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Facilities or such part, as the case may be, shall be extended by a period equal to the period during which the Facilities or such part cannot be used by the Employer because of any of the aforesaid reasons. Upon correction of the defects in the Facilities or any part thereof by repair/replacement, such repair/replacement shall have the Defect Liability Period extended by a period of twelve (12) month from the time such replacement/repair of the Facilities or any part thereof. 27.8.1 At the end of the Defect Liability Period, the contractor liability ceases except for latent defects. The contractor's liability for latent defects warranty shall be limited to a period of five (5) years

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			from the end of Defect Liability Period. For the purpose of this clause, the latent defects shall be the defects inherently lying within the material or arising out of design deficiency which do not manifest themselves during the Defect Liability Period in this GCC clause 27, but later. In case, there is any dispute between Employer and Contractor regarding latent defects, a third party as mutually agreed upon by the Employer and the Contractor shall be engaged by the Employer for settling the dispute. The third party, so engaged by the Employer, shall be paid fee plus reasonable expenditures incurred in the execution of its duties as mentioned above. These costs shall be initially paid by the Employer. In case of latent defect being proved, such costs shall be recoverable from the Contractor and the Contractor shall bear and reimburse such costs to the Employer. If the dispute regarding latent defects cannot be settled as above, then the dispute shall be settled as per provision of GCC clause 6 (Settlement of Disputes).
		27.9	Except as provided in GCC Clauses 27 and 33 (Loss of or Damage to Property / Accident or Injury to Workers/Indemnification), the Contractor shall be under no liability whatsoever and howsoever arising, and whether under the Contract or at law, in respect of defects in the Facilities or any part thereof, the Plant and Equipment, design or engineering or work executed that appear after Completion of the Facilities or any part thereof, except where such defects are the result of the gross negligence, fraud, criminal or wilful action of the Contractor.
		27.10	In addition, the Contractor shall also provide an extended warranty for any such component of the Facilities and during the period of time as may be specified in the SCC. Such obligation shall be in addition to the defect liability specified under GCC Sub-Clause 27.2.
28.	Functional Guarantees		
		28.1	The Contractor guarantees that during the Guarantee Test, the Facilities and all parts thereof shall attain the Functional Guarantees specified in Appendix 8 (Functional Guarantees) to the Contract Agreement, subject to and upon the conditions therein specified.
		28.2	If, for reasons attributable to the Contractor, the guaranteed level of the Functional Guarantees specified in Appendix 8 (Functional Guarantees) to the Contract Agreement are not met either in whole or in part, the Contractor shall, within a mutually agreed time, at its cost and expense make such changes, modifications and/or additions to the Plant or any part thereof as may be necessary to meet such Guarantees. The Contractor shall notify the Employer upon completion of the necessary changes, modifications and/or additions, and shall seek the Employer's consent to repeat the Guarantee Test. If the specified Functional Guarantees are not established even during the repeat of the Guarantee Test, the Employer may at its option, either (a) Reject the Equipment and recover the payments already made, or (b) Terminate the Contract pursuant to GCC Sub-Clause 42.2.2 and recover the payments already made, or

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			(c) Accept the equipment after levy of liquidated damages in accordance with the provisions specified in Appendix-8(Functional Guarantees) to the Contract Agreement.
		28.3	In case the Employer exercises its option to accept the equipment after levy of liquidated damages, the payment of liquidated damages under GCC Sub-Clause 28.2, up to the limitation of liability specified in the Technical Specifications/Appendix-8 (Functional Guarantees) to the Contract Agreement, shall completely satisfy the Contractor's guarantees under GCC Sub-Clause 28.2, and the Contractor shall have no further liability whatsoever to the Employer in respect thereof. Upon the payment of such liquidated damages by the Contractor, the Project Manager shall issue the Operational Acceptance Certificate for the Facilities or any part thereof in respect of which the liquidated damages have been so paid.
29.	Patent Indemnity		
		29.1	The Contractor shall, subject to the Employer's compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Employer may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Contract by reason of: (a) the installation of the Facilities by the Contractor or the use of the Facilities in the country where the Site is located; and (b) the sale of the products produced by the Facilities in any country. Such indemnity shall not cover any use of the Facilities or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, any infringement resulting from the use of the Facilities or any part thereof, or any products produced thereby in association or combination with any other equipment, plant or materials not supplied by the Contractor, pursuant to the Contract Agreement.
		29.2	If any proceedings are brought or any claim is made against the Employer arising out of the matters referred to in GCC Sub-Clause 29.1, the Employer shall promptly give the Contractor a notice thereof, and the Contractor may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defence of any such proceedings or claim. The Employer shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.
		29.3	The Employer shall indemnify and hold harmless the Contractor and its employees, officers and Subcontractors from and against any and all

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			suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Contractor may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Employer.
30.	Limitation of Liability		
		30.1	Except in cases of criminal negligence or willful misconduct, (a) neither Party shall be liable to the other Party, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, which may be suffered by the other Party in connection with the Contract, provided that this exclusion shall not apply to any obligation of the Contractor to pay liquidated damages to the Employer and (b) the aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement. (c) the aggregate liability of the Employer to the Contractor except for GCC sub-clause 29.3, whether under the Contract, in tort or otherwise, at any point of time during the execution/performance of the Contract, shall not exceed the 'total Contract Price less payments already released to the Contractor'.
			G. Risk Distribution
31.	Transfer of Ownership		
		31.1	Ownership of the Plant and Equipment
			Ownership of the Plant and Equipment (including spare parts) to be supplied from abroad and quoted in Schedule-1 shall be transferred to the Employer upon loading on to the mode of transport to be used to convey the Plant and Equipment (including spare parts) from the country of origin to that country where the site is located and upon endorsement of the dispatch documents in favour of the Employer. Ownership of the Plant and Equipment (including spare parts) quoted in Schedule-2 shall be transferred to the Employer when the Plant and Equipment are loaded on to the mode of transport to be used to convey the Plant and Equipment from the works to the site and upon endorsement of the despatch documents in favour of the Employer.
		31.2	Ownership of the Contractor's Equipment used by the Contractor and its Subcontractors in connection with the Contract shall remain with the Contractor or its Subcontractors.

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		31.3	Disposal of Surplus Material "Ownership of any Plant and Equipment in excess of the requirements for the Facilities (i.e. surplus material) shall revert to the Contractor upon Completion of the Facilities and Guarantee Test or at such earlier time when the Employer and the Contractor agree that the Plant and Equipment in question are no longer required for the Facilities, provided quantity of any Plant and Equipment specifically stipulated in the Contract shall be the property of the Employer whether or not incorporated in the Facilities. The Contractor shall remove from the site such surplus material brought by him in pursuance of the Contract, subject to the Contractor producing the necessary clearance from the relevant authorities (Customs, GST etc.), if required by law, in respect of re-export or disposal of the surplus material locally. The liability for the payment of the applicable taxes/duties, if any, on the surplus material so re-exported and/or disposed locally shall be that of the Contractor. The Contractor shall also indemnify to keep the Employer harmless from any act of omission or negligence on the part of the Contractor in following the statutory requirements with regard to removal/disposal of surplus material. The Indemnity-cum-Undertaking Agreement shall be furnished by contractor as per proforma enclosed in Section-VII (Part 3 of 3 - Forms and Procedures). Further, in case the laws require the Employer to take prior permission of the relevant Authorities before handing over the surplus material to the Contractor, the same shall be obtained by the Contractor on behalf of the Employer.
		31.4	Notwithstanding the transfer of ownership of the Plant and Equipment, the responsibility for care and custody thereof together with the risk of loss or damage thereto shall remain with the Contractor pursuant to GCC Clause 32 (Care of Facilities) hereof until Completion of the Facilities or the part thereof in which such Plant and Equipment are incorporated.
		31.5	In case of two/three contracts entered into between the Employer and the Contractor as per GCC Sub-Clause 3.6 or where the Employer hands over his equipment to the Contractor for executing the Contract, then the Contractor shall at the time of taking delivery of the Equipment through Bill of Lading or other despatch documents furnish Trust Receipt for Plant, Equipment and Materials and also execute an Indemnity-cum-Undertaking Agreement in favour of the Employer in the form acceptable to Employer for keeping the equipment in safe custody and to utilise the same exclusively for the purpose of the said Contract. Proforma for the Trust Receipt and Indemnity-cum-Undertaking Agreement is enclosed under Section-VII (Forms and Procedures). The Employer shall also issue a separate Authorisation Letter to the Contractor to enable him to take physical delivery of plant, equipment and materials from the Employer as per proforma enclosed under Section-VII (Forms and Procedures).
32.	Care of Facilities		
		32.1	The Contractor shall be responsible for the care and custody of the Facilities or any part thereof until the date of Completion of the Facilities pursuant to GCC Clause 24 (Completion of the Facilities) or, where the Contract provides for Completion of the Facilities in parts, until the date of Completion of the relevant part, and shall make good at its own cost any loss or damage that may occur to the Facilities or the relevant part thereof from any cause whatsoever during such period. The Contractor shall also be responsible for any loss or damage to the Facilities caused by the

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
			Contractor or its Subcontractors in the course of any work carried out, pursuant to GCC Clause 27 (Defect Liability). Notwithstanding the foregoing, the Contractor shall not be liable for any loss or damage to the Facilities or that part thereof caused by reason of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GCC Sub-Clauses 32.2 and 38.1.
		32.2	If any loss or damage occurs to the Facilities or any part thereof or to the Contractor's temporary facilities by reason of (a) (insofar as they relate to the country where the Site is located) nuclear reaction, nuclear radiation, radioactive contamination, pressure wave caused by aircraft or other aerial objects, or any other occurrences that an experienced contractor could not reasonably foresee, or if reasonably foreseeable could not reasonably make provision for or insure against, insofar as such risks are not normally insurable on the insurance market and are mentioned in the general exclusions of the policy of insurance, including War Risks and Political Risks, taken out under GCC Clause 34 (Insurance) hereof (b) any use or occupation by the Employer or any third party (other than a Subcontractor) authorized by the Employer of any part of the Facilities (c) any use of or reliance upon any design, data or specification provided or designated by or on behalf of the Employer, or any such matter for which the Contractor has disclaimed responsibility herein, the Employer shall pay to the Contractor all sums payable in respect of the Facilities executed, notwithstanding that the same be lost, destroyed or damaged, and will pay to the Contractor the replacement value of all temporary facilities and all parts thereof lost, destroyed or damaged. If the Employer requests the Contractor in writing to make good any loss or damage to the Facilities thereby occasioned, the Contractor shall make good the same at the cost of the Employer in accordance with GCC Clause 39 (Change in the Facilities). If the Employer does not request the Contractor in writing to make good any loss or damage to the Facilities thereby occasioned, the Employer shall either request a change in accordance with GCC Clause 39 (Change in the Facilities), excluding the performance of that part of the Facilities thereby lost, destroyed or damaged, or, where the loss or damage affects a substantial part of the Facilities, the Employer shall terminate the Contract pursuant to GCC Sub-Clause 42.1 (Termination for Employer's Convenience) hereof, except that the Contractor shall have no entitlement to profit under paragraph (e) of GCC Sub-Clause 42.1.3 in respect of any unexecuted Facilities as at the date of termination.
		32.3	The Contractor shall be liable for any loss of or damage to any Contractor's Equipment, or any other property of the Contractor used or intended to be used for purposes of the Facilities, except (i) as mentioned in GCC Sub-Clause 32.2 (with respect to the Contractor's temporary facilities), and (ii) where such loss or damage arises by reason of any of the matters specified in GCC Sub-Clauses 32.2(b) and (c) and 38.1.
		32.4	With respect to any loss or damage caused to the Facilities or any part thereof or to the Contractor's Equipment by reason of any of the matters

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
			specified in GCC Sub-Clause 38.1, the provisions of GCC Sub-Clause 38.3 shall apply.
33.	Loss of or Damage to Property; Accident or Injury to workers; Indemnification		
		33.1	Subject to GCC Sub-Clause 33.3, the Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death or injury of any person or loss of or damage to any property (other than the Facilities whether accepted or not), arising in connection with the supply and installation of the Facilities and by reason of the negligence of the Contractor or its Subcontractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its contractors, employees, officers or agents.
		33.2	If any proceedings are brought or any claim is made against the Employer that might subject the Contractor to liability under GCC Sub-Clause 33.1, the Employer shall promptly give the Contractor a notice thereof and the Contractor may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defence of any such proceedings or claim. The Employer shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.
		33.3	The Employer shall indemnify and hold harmless the Contractor and its employees, officers and Subcontractors from any liability for loss of or damage to property of the Employer, other than the Facilities not yet taken over, that is caused by fire, explosion or any other perils, in excess of the amount recoverable from insurances procured under GCC Clause 34 (Insurances), provided that such fire, explosion or other perils were not caused by any act or failure of the Contractor.
		33.4	The party entitled to the benefit of an indemnity under this GCC Clause 33 shall take all reasonable measures to mitigate any loss or damage which has occurred. If the party fails to take such measures, the other party's liabilities shall be correspondingly reduced.
34.	Insurance		
		34.1	To the extent specified in Appendix 3 (Insurance Requirements) to the Contract Agreement, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said Appendix. The identity of the insurers and the form of the policies shall

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
			be subject to the approval of the Employer, who should not unreasonably withhold such approval. (a) Cargo Insurance During Transport Covering loss or damage occurring while in transit from the Contractor's or Subcontractor's works or stores until arrival at the Site, to the Plant and Equipment (including spare parts therefor) and to the Contractor's Equipment. (b) Installation All Risks Insurance Covering physical loss or damage to the Facilities at the Site, occurring prior to Completion of the Facilities, with extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the Defect Liability Period while the Contractor is on the Site for the purpose of performing its obligations during the Defect Liability Period. (c) Third Party Liability Insurance Covering bodily injury or death suffered by third parties (including the Employer's personnel) and loss of or damage to property occurring in connection with the supply and installation of the Facilities. (d) Automobile Liability Insurance Covering use of all vehicles used by the Contractor or its Subcontractors (whether or not owned by them) in connection with the execution of the Contract. (e) Workers' Compensation In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed. (f) Employer's Liability In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed. (g) Other Insurances Such other insurances as may be specifically agreed upon by the parties hereto as listed in the said Appendix 3.
		34.2	The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 34.1, except for the Third Party Liability, Workers' Compensation and Employer's Liability Insurances, and the Contractor's Subcontractors shall be named as co-insureds under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 34.1 except for the Cargo Insurance During Transport, Workers' Compensation and Employer's Liability Insurances. All insurer's rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies.

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
		34.3	The Contractor shall, in accordance with the provisions of Appendix 3 (Insurance Requirements) to the Contract Agreement, deliver to the Employer certificates of insurance (or copies of the insurance policies) as evidence that the required policies are in full force and effect. The certificates shall provide that no less than twenty-one (21) days' notice shall be given to the Employer by insurers prior to cancellation or material modification of a policy.
		34.4	The Contractor shall ensure that, where applicable, its Subcontractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Subcontractors are covered by the policies taken out by the Contractor.
		34.5	The Employer shall at its expense take out and maintain in effect during the performance of the Contract those insurances specified in Appendix 3 (Insurance Requirements) to the Contract Agreement.
		34.6	If the Contractor fails to take out and/or maintain in effect the insurances referred to in GCC Sub-Clause 34.1, the Employer may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Contractor under the Contract any premium that the Employer shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Contractor. If the Employer fails to take out and/or maintain in effect the insurances referred to in GCC 34.5, the Contractor may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Employer under the Contract any premium that the Contractor shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Employer. If the Contractor fails to or is unable to take out and maintain in effect any such insurances, the Contractor shall nevertheless have no liability or responsibility towards the Employer, and the Contractor shall have full recourse against the Employer for any and all liabilities of the Employer herein.
		34.7	Unless otherwise provided in the Contract, the Contractor shall prepare and conduct all and any claims made under the policies effected by it pursuant to this GCC Clause 34, and all monies payable by any insurers shall be paid to the Contractor as per the procedure outlined in GCC Sub-Clause 34.8 below. The Employer shall give to the Contractor all such reasonable assistance as may be required by the Contractor. With respect to insurance claims in which the Employer's interest is involved, the Contractor shall not give any release or make any compromise with the insurer without the prior written consent of the Employer. With respect to insurance claims in which the Contractor's interest is involved, the Employer shall not give any release or make any compromise with the insurer without the prior written consent of the Contractor.
		34.8	(i) Wherever total damages/loss of equipment/material, would occur, the Contractor will be entitled to payment of all payments received from the underwriters except the following amounts: (a) The amount paid to the Contractor under the Contract in respect of equipment/material damaged/lost (excluding the pro-rata initial advance) but including the entire amount of escalation, if any, already paid to the Contractor.

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
			(b) Taxes and duties which have already been paid by the Employer. In the event the claim money settled, is less than the total of the amount in a & b above, then the entire claim money settled will be retained by the Employer and the Contractor will forthwith pay the Employer the short fall amount between the claim money and the total of amounts as per a & b mentioned above. Subsequent payments, if any, due under the Contract shall be regulated by the relevant terms of payment. (ii) In case of damage to any equipment/material during any stage, the Contractor upon rectification of the damaged equipment to the satisfaction of the Employer shall be paid to the extent of full claims settled by the underwriters.
35.	Unforeseen Conditions		
		35.1	If, during the execution of the Contract, the Contractor shall encounter on the Site any physical conditions (other than climatic conditions) or artificial obstructions that could not have been reasonably foreseen prior to the date of the Contract Agreement by an experienced contractor on the basis of reasonable examination of the data relating to the Facilities (including any data as to boring tests) provided by the Employer, and on the basis of information that it could have obtained from a visual inspection of the Site (if access thereto was available) or other data readily available to it relating to the Facilities, and if the Contractor determines that it will in consequence of such conditions or obstructions incur additional cost and expense or require additional time to perform its obligations under the Contract that would not have been required if such physical conditions or artificial obstructions had not been encountered, the Contractor shall promptly, and before performing additional work or using additional Plant and Equipment or Contractor's Equipment, notify the Project Manager in writing of (a) the physical conditions or artificial obstructions on the Site that could not have been reasonably foreseen (b) the additional work and/or Plant and Equipment and/or Contractor's Equipment required, including the steps which the Contractor will or proposes to take to overcome such conditions or obstructions (c) the extent of the anticipated delay (d) the additional cost and expense that the Contractor is likely to incur. On receiving any notice from the Contractor under this GCC Sub-Clause 35.1, the Project Manager shall promptly consult with the Employer and Contractor and decide upon the actions to be taken to overcome the physical conditions or artificial obstructions encountered. Following such consultations, the Project Manager shall instruct the Contractor, with a copy to the Employer, of the actions to be taken.
		35.2	Any reasonable additional cost and expense incurred by the Contractor in following the instructions from the Project Manager to overcome such physical conditions or artificial obstructions referred to in GCC Sub-Clause

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
			35.1 shall be paid by the Employer to the Contractor as an addition to the Contract Price.
		35.3	If the Contractor is delayed or impeded in the performance of the Contract because of any such physical conditions or artificial obstructions referred to in GCC Sub-Clause 35.1, the Time for Completion shall be extended in accordance with GCC Clause 40 (Extension of Time for Completion).
36.	Change in Laws and Regulations		
		36.1	If, after the date seven (7) days prior to the deadline set for Price Bid submission, in the country where the Site is located, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract. However, these adjustments shall not be applicable on procurement of raw materials, intermediary components, and intermediary services etc. by the Contractor. Notwithstanding the foregoing, such additional or reduced costs shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with the Appendix 2 to the Contract Agreement.
37.	Force Majeure		
		37.1	"Force Majeure" shall mean any event beyond the reasonable control of the Employer or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected.
		37.2	If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.
		37.3	The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with GCC Clause 40 (Extension of Time for Completion).
		37.4	The party or parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its or their performance of the Contract and to fulfil its or their obligations under the Contract, but without prejudice to either party's right to terminate the Contract under GCC Sub-Clauses 37.6 and 38.5.
		37.5	No delay or non-performance by either party hereto caused by the occurrence of any event of Force Majeure shall (a) constitute a default or breach of the Contract

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
			(b) (subject to GCC Sub-Clauses 32.2, 38.3 and 38.4) give rise to any claim for damages or additional cost or expense occasioned thereby if and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.
		37.6	If the performance of the Contract is substantially prevented, hindered or delayed for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of one or more events of Force Majeure during the currency of the Contract, the parties will attempt to develop a mutually satisfactory solution, failing which the dispute shall be resolved in accordance with GCC Clause 6.
		37.7	Notwithstanding GCC Sub-Clause 37.5, Force Majeure shall not apply to any obligation of the Employer to make payments to the Contractor herein.
38.	War Risks		
		38.1	“War Risks” shall mean any of the following events occurring or existing in or near the country (or countries) where the Site is located: (a) war, hostilities or warlike operations (whether a state of war is declared or not), invasion, act of foreign enemy and civil war (b) rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts, and (c) any explosion or impact of any mine, bomb, shell, grenade or other projectile, missile, munitions or explosive of war.
		38.2	Notwithstanding anything contained in the Contract, the Contractor shall have no liability whatsoever for or with respect to (a) destruction of or damage to Facilities, Plant & Equipment, or any part thereof (b) destruction of or damage to property of the Employer or any third party (c) injury or loss of life if such destruction, damage, injury or loss of life is caused by any War Risks, and the Employer shall indemnify and hold the Contractor harmless from and against any and all claims, liabilities, actions, lawsuits, damages, costs, charges or expenses arising in consequence of or in connection with the same.
		38.3	If the Facilities or any Plant and Equipment or Contractor's Equipment or any other property of the Contractor used or intended to be used for the purposes of the Facilities shall sustain destruction or damage by reason of any War Risks, the Employer shall pay the Contractor for (a) any part of the Facilities or the Plant and Equipment so destroyed or damaged (to the extent not already paid for by the Employer)

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			(b) replacing or making good any Contractor's Equipment or other property of the Contractor so destroyed or damaged so far as may be required by the Employer, and as may be necessary for completion of the Facilities, (c) replacing or making good any such destruction or damage to the Facilities or the Plant and Equipment or any part thereof. If the Employer does not require the Contractor to replace or make good any such destruction or damage to the Facilities, the Employer shall either request a change in accordance with GCC Clause 39 (Change in the Facilities), excluding the performance of that part of the Facilities thereby destroyed or damaged or, where the loss, destruction or damage affects a substantial part of the Facilities, shall terminate the Contract, pursuant to GCC Sub-Clause 42.1 (Termination for Employer's Convenience).
		38.4	Notwithstanding anything contained in the Contract, the Employer shall pay the Contractor for any increased costs or incidentals to the execution of the Contract that are in any way attributable to, consequent on, resulting from, or in any way connected with any War Risks, provided that the Contractor shall as soon as practicable notify the Employer in writing of any such increased cost.
		38.5	If during the performance of the Contract any War Risks shall occur that financially or otherwise materially affect the execution of the Contract by the Contractor, the Contractor shall use its reasonable efforts to execute the Contract with due and proper consideration given to the safety of its and its Subcontractors' personnel engaged in the work on the Facilities, provided, however, that if the execution of the work on the Facilities becomes impossible or is substantially prevented for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of any War Risks, the parties will attempt to develop a mutually satisfactory solution, failing which the dispute will be resolved in accordance with GCC Clause 6.
		38.6	In the event of termination pursuant to GCC Sub-Clauses 38.3, the rights and obligations of the Employer and the Contractor shall be specified in GCC Sub-Clauses 42.1.2 and 42.1.3, except that the Contractor shall have no entitlement to profit under paragraph (e) of GCC Sub-Clause 42.1.3 in respect of any unexecuted Facilities as of the date of termination.
H. Change in Contract Elements			
39.	Change In The Facilities		
		39.1	Introducing a Change 39.1.1 The Employer shall have the right to propose, and subsequently require, that the Project Manager order the Contractor from time to time during the performance of the Contract to make any change, modification, addition or deletion to, in or from the Facilities (hereinafter called "Change"), provided that such Change falls within the general scope of the Facilities and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Facilities and the technical compatibility of the Change

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			envisaged with the nature of the Facilities as specified in the Contract . 39.1.2 The Contractor may from time to time during its performance of the Contract propose to the Employer (with a copy to the Project Manager) any Change that the Contractor considers necessary or desirable to improve the quality, efficiency or safety of the Facilities. The Employer may at its discretion approve or reject any Change proposed by the Contractor. 39.1.3 Notwithstanding GCC Sub-Clauses 39.1.1 and 39.1.2, no change made necessary because of any default of the Contractor in the performance of its obligations under the Contract shall be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Completion. 39.1.4 The procedure on how to proceed with and execute Changes is specified in GCC Sub-Clauses 39.2 and 39.3.
		39.2	Changes Originating from Employer 39.2.1 If the Employer proposes a Change pursuant to GCC Sub-Clause 39.1.1, it shall send to the Contractor a "Request for Change Proposal," requiring the Contractor to prepare and furnish to the Project Manager as soon as reasonably practicable a "Change Proposal," which shall include the following: (a) brief description of the Change (b) effect on the Time for Completion (c) estimated cost of the Change (d) effect on Functional Guarantees (if any) (e) effect on any other provisions of the Contract. 39.2.2 The pricing of any change shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If the rates and prices of any change are not available in the Contract, the parties thereto shall agree on specific rates for the variation of the change. 39.2.3 If before or during the preparation of the Change Proposal it becomes apparent that the aggregate effect of compliance therewith and with all other Change Orders that have already become binding upon the Contractor under this GCC Clause 39 would be to increase or decrease the Contract Price as originally set forth in Article 2 (Contract Price) of the Contract Agreement by more than fifteen (15) percent, the Contractor may give a written notice of objection thereto prior to furnishing the Change Proposal as aforesaid. If the Employer accepts the Contractor's objection, the Employer and the Contractor shall agree on specific rates for valuation of the change. 39.2.4 Upon receipt of the Change Proposal, the Employer and the Contractor shall mutually agree upon all matters therein contained including agreement on rates if such rates are not available in the Contract or if the limit of 15% set forth in Clause 39.2.3 has been exceeded. Within fourteen (14) days after such

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			agreement, the Employer shall, if it intends to proceed with the Change, issue the Contractor with a Change Order. If the Employer is unable to reach a decision within fourteen (14) days, it shall notify the Contractor with details of when the Contractor can expect a decision. If the Employer decides not to proceed with the Change for whatever reason, it shall, within the said period of fourteen (14) days, notify the Contractor accordingly. 39.2.5 If the Employer and the Contractor cannot reach agreement on the price for the Change, an equitable adjustment to the Time for Completion, or any other matters identified in the Change Proposal, the Employer may nevertheless instruct the Contractor to proceed with the Change by issue of a "Pending Agreement Change Order." Upon receipt of a Pending Agreement Change Order, the Contractor shall immediately proceed with effecting the Changes covered by such Order. The parties shall thereafter attempt to reach agreement on the outstanding issues under the Change Proposal. If the parties cannot reach agreement within sixty (60) days from the date of issue of the Pending Agreement Change Order, then the matter may be dealt in accordance with the provisions of GCC Clause 6 (Settlement of Disputes).
		39.3	Changes Originating from Contractor 39.3.1 If the Contractor proposes a Change pursuant to GCC Sub-Clause 39.1.2, the Contractor shall submit to the Project Manager a written "Application for Change Proposal," giving reasons for the proposed Change and including the information specified in GCC Sub-Clause 39.2.1. Upon receipt of the Application for Change Proposal, the parties shall follow the procedures outlined in GCC Sub-Clauses 39.2.4 and 39.2.5.
40.	Extension of Time for Completion		
		40.1	The Time(s) for Completion specified in the SCC shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following: (a) any Change in the Facilities as provided in GCC Clause 39 (Change in the Facilities) (b) any occurrence of Force Majeure as provided in GCC Clause 37 (Force Majeure), unforeseen conditions as provided in GCC Clause 35 (Unforeseen Conditions), or other occurrence of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GCC Sub-Clause 32.2

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			(c) any suspension order given by the Employer under GCC Clause 41 (Suspension) hereof or reduction in the rate of progress pursuant to GCC Sub-Clause 41.2 or (d) any changes in laws and regulations as provided in GCC Clause 36 (Change in Laws and Regulations) or (e) any default or breach of the Contract by the Employer, specifically including failure to supply the items listed in Appendix 6 (Scope of Works and Supply by the Employer) to the Contract Agreement, or any activity, act or omission of any other contractors employed by the Employer or failure to give possession of site under GCC Clause 10.2. (f) any other matter specifically mentioned in the Contract; by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.
		40.2	Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Project Manager a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Employer and the Contractor shall agree upon the period of such extension. In the event that the Contractor does not accept the Employer's estimate of a fair and reasonable time extension, then the matter may be dealt in accordance with the provisions of GCC Clause 6 (Settlement of Disputes).
		40.3	The Contractor shall at all times use its reasonable efforts to minimize any delay in the performance of its obligations under the Contract.
		40.4	Documents for Consideration of Time Extension The following documents shall form the principal basis for consideration of Time Extension pursuant to GCC clause 40 with or without LD, levy of liquidated damages pursuant to GCC clause 26 and settlement of extra claims during the execution of contract: 1. The joint recordings in "Hindrance Register" and "Weekly Review Register". 2. Records of Technical Coordination Meetings. 3. Records of Contract Review meetings. 4. Written notices issued by the "Project Manager" or his authorized representative to Contractor in the relevant period.
41.	Suspension		
		41.1	The Employer/ Project Manager may, by notice to the Contractor, order the Contractor to suspend performance of any or all of its obligations under the Contract. Such notice shall specify the obligation of which performance is to be suspended, the effective date of the suspension and

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			the reasons therefor. The Contractor shall thereupon suspend performance of such obligation (except those obligations necessary for the care or preservation of the Facilities) until ordered in writing to resume such performance by the Project Manager/ Employer. If, by virtue of a suspension order given by the Project Manager/Employer, other than by reason of the Contractor's default or breach of the Contract, the Contractor's performance of any of its obligations is suspended for an aggregate period of more than ninety (90) days, then at any time thereafter and provided that at that time such performance is still suspended, the Contractor may give a notice to the Project Manager requiring that the Employer shall, within twenty-eight (28) days of receipt of the notice, order the resumption of such performance or request and subsequently order a change in accordance with GCC Clause 39 (Change in the Facilities), excluding the performance of the suspended obligations from the Contract. If the Employer fails to do so within such period, the Contractor may, by a further notice to the Project Manager, elect to treat the suspension, where it affects a part only of the Facilities, as a deletion of such part in accordance with GCC Clause 39 (Change in the Facilities) or, where it affects the whole of the Facilities, as termination of the Contract under GCC Sub-Clause 42.1 (Termination for Employer's Convenience).
		41.2	If (a) the Employer has failed to pay the Contractor any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to Appendix 1 (Terms and Procedures of Payment) to the Contract Agreement, or commits a substantial breach of the Contract, the Contractor may give a notice to the Employer that requires payment of such sum, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum, fails to approve such invoice or supporting documents or give its reasons for withholding such approval, or fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Contractor's notice or (b) the Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer's failure to provide possession of or access to the Site or other areas in accordance with GCC Sub-Clause 10.2, or failure to obtain any governmental permit necessary for the execution and/or completion of the Facilities; then the Contractor may by fourteen (14) days' notice to the Employer suspend performance of all or any of its obligations under the Contract, or reduce the rate of progress.
		41.3	If the Contractor's performance of its obligations is suspended or the rate of progress is reduced pursuant to this GCC Clause 41, then the Time for Completion shall be extended in accordance with GCC Sub-Clause 40.1, and any and all additional costs or expenses incurred by the Contractor as a result of such suspension or reduction shall be paid by the Employer to the Contractor in addition to the Contract Price, except in the case of

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			suspension order or reduction in the rate of progress by reason of the Contractor's default or breach of the Contract. The Bank Guarantee and Insurance Charges for the extended period on account of delays attributable to the Employer shall be reimbursed at the following rates: Rate applicable for : 0.25% p.a. + GST, or actual, whichever is lower, subject to documentary evidence. reimbursement of BG Charges Rate applicable for Insurance Charges: The Insurance charges (including GST) for the extended period on account of delays attributable to the Employer shall be reimbursed at actuals based on documentary evidence submitted by the Contractor. In such cases, the Contractor should obtain Insurance Policy directly from the Insurance Company and not through Brokers.
		41.4	During the period of suspension, the Contractor shall not remove from the Site any Plant and Equipment, any part of the Facilities or any Contractor's Equipment, without the prior written consent of the Employer.
42.	Termination		
		42.1	Termination for Employer's Convenience 42.1.1 The Employer may at any time terminate the Contract for any reason by giving the Contractor a notice of termination that refers to this GCC Sub-Clause 42.1. 42.1.2 Upon receipt of the notice of termination under GCC Sub-Clause 42.1.1, the Contractor shall either immediately or upon the date specified in the notice of termination (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii) below (c) remove all Contractor's Equipment from the Site, repatriate the Contractor's and its Subcontractors' personnel from the Site, remove from the Site any wreckage, rubbish and debris of any kind, and leave the whole of the Site in a clean and safe condition. (d) In addition, the Contractor, subject to the payment specified in GCC Sub-Clause 42.1.3, shall (i) deliver to the Employer the parts of the Facilities executed by the Contractor up to the date of termination (ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Facilities

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			and to the Plant and Equipment as at the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors (iii) deliver to the Employer all non-proprietary drawings, specifications and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Facilities. 42.1.3 In the event of termination of the Contract under GCC Sub-Clause 42.1.1, the Employer shall pay to the Contractor the following amounts: (a) the Contract Price, properly attributable to the parts of the Facilities executed by the Contractor as of the date of termination (b) the costs reasonably incurred by the Contractor in the removal of the Contractor's Equipment from the Site and in the repatriation of the Contractor's and its Subcontractors' personnel (c) any amounts to be paid by the Contractor to its Subcontractors in connection with the termination of any subcontracts, including any cancellation charges (d) costs incurred by the Contractor in protecting the Facilities and leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC Sub-Clause 42.1.2 (e) the cost of satisfying all other obligations, commitments and claims that the Contractor may in good faith have undertaken with third parties in connection with the Contract and that are not covered by paragraphs (a) through (d) above.
		42.2	Termination for Contractor's Default 42.2.1 The Employer, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith in the following circumstances by giving a notice of termination and its reasons therefor to the Contractor, referring to this GCC Sub-Clause 42.2: (a) if the Contractor becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, if the Contractor is a corporation, a resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt (b) if the Contractor assigns or transfers the Contract or any right or interest therein in violation of the provision of GCC Clause 43 (Assignment).

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			(c) if the Contractor, in the judgement of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. For the purpose of this Sub-Clause : "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition. (d) If the Contractor, sub-contracts any part of the works in violation of the provision of GCC Clause 19.4. 42.2.2 If the Contractor (a) has abandoned or repudiated the Contract (b) has without valid reason failed to commence work on the Facilities promptly or has suspended (other than pursuant to GCC Sub-Clause 41.2) the progress of Contract performance for more than twenty-eight (28) days after receiving a written instruction from the Employer to proceed (c) persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract without just cause (d) refuses or is unable to provide sufficient materials, services or labour to execute and complete the Facilities in the manner specified in the program furnished under GCC Clause 18 (Program of Performance) at rates of progress that give reasonable assurance to the Employer that the Contractor can attain Completion of the Facilities by the Time for Completion as extended then the Employer may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within fourteen (14) days of its receipt of such notice, then the Employer may terminate the Contract forthwith by giving a notice of termination to the Contractor that refers to this GCC Sub-Clause 42.2. 42.2.3 Upon receipt of the notice of termination under GCC Sub-Clauses 42.2.1 or 42.2.2, the Contractor shall, either immediately or upon such date as is specified in the notice of termination, (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole

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			purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) below (c) deliver to the Employer the parts of the Facilities executed by the Contractor up to the date of termination (d) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Works and to the Plant and Equipment as at the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors (e) deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Facilities. 42.2.4 The Employer may enter upon the Site, expel the Contractor, and complete the Facilities itself or by employing any third party. The Employer may, to the exclusion of any right of the Contractor over the same, take over and use with the payment of a fair rental rate to the Contractor, with all the maintenance costs to the account of the Employer and with an indemnification by the Employer for all liability including damage or injury to persons arising out of the Employer's use of such equipment, any Contractor's Equipment owned by the Contractor and on the Site in connection with the Facilities for such reasonable period as the Employer considers expedient for the supply and installation of the Facilities. Upon completion of the Facilities or at such earlier date as the Employer thinks appropriate, the Employer shall give notice to the Contractor that such Contractor's Equipment will be returned to the Contractor at or near the Site and shall return such Contractor's Equipment to the Contractor in accordance with such notice. The Contractor shall thereafter without delay and at its cost remove or arrange removal of the same from the Site. 42.2.5 Subject to GCC Sub-Clause 42.2.6, the Contractor shall be entitled to be paid the Contract Price attributable to the Facilities executed as at the date of termination, the value of any unused or partially used Plant and Equipment on the Site, and the costs, if any, incurred in protecting the Facilities and in leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC Sub-Clause 42.2.3. Any sums due to the Employer from the Contractor accruing prior to the date of termination shall be deducted from the amount to be paid to the Contractor under this Contract. 42.2.6 If the Employer completes the Facilities, the cost of completing the Facilities by the Employer shall be determined. If the sum that the Contractor is entitled to be paid, pursuant to GCC Sub-Clause 42.2.5, plus the reasonable costs incurred by

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			the Employer in completing the Facilities, exceeds the Contract Price, the Contractor shall be liable for such excess. If such excess is greater than the sums due to the Contractor under GCC Sub-Clause 42.2.5, the Contractor shall pay the balance to the Employer, and if such excess is less than the sums due to the Contractor under GCC Sub-Clause 42.2.5, the Employer shall pay the balance to the Contractor. The Employer and the Contractor shall agree, in writing, on the computation described above and the manner in which any sums shall be paid.
		42.3	Termination by Contractor
			42.3.1 If (a) the Employer has failed to pay the Contractor any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to Appendix 1 (Terms and Procedures of Payment) of the Contract Agreement, or commits a substantial breach of the Contract, the Contractor may give a notice to the Employer that requires payment of such sum, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum, fails to approve such invoice or supporting documents or give its reasons for withholding such approval, fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Contractor's notice, or (b) the Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer's failure to provide possession of or access to the Site or other areas or failure to obtain any governmental permit necessary for the execution and/or completion of the Facilities which the Employer is required to obtain as per provision of the Contract or as per relevant applicable laws of the country, then the Contractor may give a notice to the Employer thereof, and if the Employer has failed to pay the outstanding sum, to approve the invoice or supporting documents, to give its reasons for withholding such approval, or to remedy the breach within twenty-eight (28) days of such notice, or if the Contractor is still unable to carry out any of its obligations under the Contract for any reason attributable to the Employer within twenty-eight (28) days of the said notice, the Contractor may by a further notice to the Employer referring to this GCC Sub-Clause 42.3.1, forthwith terminate the Contract. 42.3.2 The Contractor may terminate the Contract forthwith by giving a notice to the Employer to that effect, referring to this GCC Sub-Clause 42.3.2, if the Employer becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, being a corporation, if a resolution is passed or

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			order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Employer takes or suffers any other analogous action in consequence of debt. 42.3.3 If the Contract is terminated under GCC Sub-Clauses 42.3.1 or 42.3.2, then the Contractor shall immediately (a) cease all further work, except for such work as may be necessary for the purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d)(ii) (c) remove all Contractor's Equipment from the Site and repatriate the Contractor's and its Subcontractor's personnel from the Site (d) In addition, the Contractor, subject to the payment specified in GCC Sub-Clause 42.3.4, shall (i) deliver to the Employer the parts of the Facilities executed by the Contractor up to the date of termination (ii) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Facilities and to the Plant and Equipment as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors (iii) deliver to the Employer all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Facilities. 42.3.4 If the Contract is terminated under GCC Sub-Clauses 42.3.1 or 42.3.2, the Employer shall pay to the Contractor all payments specified in GCC Sub-Clause 42.1.3 and reasonable compensation for all loss or damage sustained by the Contractor arising out of, in connection with or in consequence of such termination. 42.3.5 Termination by the Contractor pursuant to this GCC Sub-Clause 42.3 is without prejudice to any other rights or remedies of the Contractor that may be exercised in lieu of or in addition to rights conferred by GCC Sub-Clause 42.3.
		42.4	In this GCC Clause 42, the expression "Facilities executed" shall include all work executed, Installation Services provided, any or all Plant and Equipment acquired (or subject to a legally binding obligation to purchase) by the Contractor and used or intended to be used for the purpose of the Facilities, up to and including the date of termination.
		42.5	In this GCC Clause 42, in calculating any monies due from the Employer to the Contractor, account shall be taken of any sum previously paid by

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			the Employer to the Contractor under the Contract, including any advance payment paid pursuant to Appendix 1 (Terms and Procedures of Payment) to the Contract Agreement.
43.	Assignment		
		43.1	The Contractor shall not, without the express prior written consent of the Employer, assign to any third party the Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder, except that the Contractor shall be entitled to assign either absolutely or by way of charge any monies due and payable to it or that may become due and payable to it under the Contract.
			I. Other Conditions
44.	Contractor Performance Feedback and Evaluation System		
			The Employer has in place an established 'Contractor Performance and Feedback System' against which the Contractor's performance during the execution of Contract shall be evaluated on a continuous basis at regular intervals on the following seven parameters: • Engineering & Quality Assurance Capability • Finance • Supply • Construction/ Installation • Field Quality • Safety • Claims & Disputes The score-based feedback formats based on which Contractor's performance shall be evaluated is enclosed at Annexure-III to SCC. In case Performance Rating obtained above is 'Unsatisfactory', in a single contract in two consecutive billing cycles, the Contractor shall not be recommended for issue of tender enquiry/ price bid opening/ placement of PO for a period as deemed fit not more than 2 years. Any early revocation of debarment shall be as per the 'Debarment Policy' as per Annexure-II to SCC.
45.	Fraud Prevention Policy		
			The contractor along with their associate/collaborator/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to the Fraud Prevention Policy of the Employer attached at Annexure-VII to Special Conditions of Contract (SCC) of the bidding Documents. The Contractor alongwith their associate/collaborator/sub-contractors/sub-vendors/consultants/serive providers shall observe the highest standard of ethics and shall not indulge or allow any body else working in their organization to indulge in fraudulent activities during execution of the contract. The contractor shall immediately

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			apprise the Employer about any fraud or suspected fraud as soon as it comes to their notice.
46.	Debarment Policy		
			The Employer has in place a Debarment Policy as enclosed at Annexure-II to Special Conditions of Contract (SCC) of the Bidding Documents. Business dealings may be withheld or banned with the Contractor on account of any Default by the Contractor under GCC Clause 42.2.1 & 42.2.2 or any of the grounds as detailed in the said Debarment Policy.
47	Integrity Pact		
			If the Employer has terminated the Contract pursuant to Section-3 of the Integrity Pact (IP), the Employer shall encash the Contract Performance Bank Guarantee, in accordance with Section-4 of the Integrity Pact.
48	Independent External monitors		
			Deleted
49	Contractor's Labour Information Management System (CLIMS)		
		49.1	(a) The Contractor has to necessarily get itself registered in the Contractor's Labour Information Management System (CLIMS), which will be installed by the Employer. (b) The entry and exit of all contract labour to the plant premises will be through Gate Access Control System of above 'Contractor's Labour Information Management System'. (c) It will be responsibility of the Contractor to ensure timely exit of all labours from the plant premises after completion of job of that day. (d) The Contractor has to abide with all the statutory compliance applicable to its workers and employees and update the details of the same in the above system.
50	No Claim for interest or damage		
		50.1	Interest on money due to the contractor: Contractor shall not be entitled to any interest or damage in case of any delay on the part of the Employer to pay the amount due upon measurement or as per Contract or otherwise. Contractor shall also not be entitled to interest upon any guarantee/ security/ retention money or payments in arrears or upon any balance which may on the final settlement of his account be due to him.

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		50.2	No claim for interest or damage: No claim for interest or damage will be entertained or be payable by the Employer in respect of any amount or balance which may be lying with the Employer or may become due upon settlement/adjudication of any dispute, difference or misunderstanding between the parties by way of arbitration or court proceedings or otherwise or in respect of any delay or omission on the part of the Employer in making intermediate or final payment or in respect of any amount/damage which may be claimed through arbitration or court proceedings or in any other respect whatsoever.

51	Human Resources	51.1	The Contractor for the purpose of the Contract shall engage / employ adequate number of key personnel in all areas such as design, engineering, construction, installation, planning, scheduling and carrying out of all maintenance of his plant and equipment, safety and competent and skilled work force as directed by the Project Manager. The Project Manager will approve any proposed replacement of such key personnel including work force only if their qualifications, experience, competence and capabilities are substantially equal to or better than those personnel originally identified and approved by the Project Manager.
		51.2	The Project Manager may require the Contractor to remove from Site of Works or from any other area of Work related to the Contract, any member of the Contractor personnel or work force who (i) Persists in any misconduct or lack of care (ii) Performs his duties incompetently or negligently or otherwise carelessly (iii) Fails to conform with any provisions of the Contract or (iv) Persists in any conduct which is prejudicial to the safety, health or protection of the Work and environment.
		51.3	If appropriate, the Contractor shall appoint a suitable replacement within fourteen (14) days or within such period as may be agreed between the Project Manager and Contractor. The Contractor shall unless otherwise provided in the Contract, make his own arrangement for engagement of all staff and labor, local or otherwise and for their payment, housing, transport, lodging and welfare as may be required by law and or by industry practice. The Contractor shall provide the Project Manager a return in detail in such form and at such intervals as he may reasonably prescribe showing the staff and number of the several classes of labour and other staff from time to time employed by the Contractor at Site or in connection with the Work along with such information as the Project Manager may reasonably require.

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
		51.4	Labor laws and Regulations and compliance thereof 51.4.1 During the entire period of Contract, the Contractor and his Sub-Contractors shall, at all times abide by all existing labor enactments, rules made therein, regulations, notifications and bye-laws by the appropriate government, local authority or any other labor laws or notification that may be issued under any labor law prevailing as on the date seven (7) days prior to the date set for opening of the Techno-Commercial Bids, published by the State or Central Government or Local Authorities. An illustrative list of applicable acts, notifications, rules etc. in connection with the labor as applicable as mentioned subsequently at para 51.4.8 in GCC. This list is not in any way exhaustive and shall not absolve the Contractor from any of his liabilities or responsibilities in compliance with any other laws, regulations, notifications that may be in force during the tenure of Contract. 51.4.2 The Contractor and his Sub-Contractors shall indemnify the Employer, from any action taken against the Employer by any competent authority in connection with the enforcement of the applicable laws, regulations, notifications, on account of contravention of any of the provisions therein, including amendments thereto. If the Employer is caused to pay or otherwise made liable, such amounts as may be necessary for non-observance of the provisions stipulated in the laws, rules, notifications including amendments, if any on the part of the Contractor and/or his Sub-Contractors, the Project Manager / Employer shall have the right to deduct any such money from any amount due to the Contractor including his performance security, under the Contract. The Employer shall also have the right to recover from the Contractor any sum required or estimated as required for making good any loss or damage suffered / likely to be suffered by the Employer, on this account. 51.4.3 If due to an enactment of any new Act or Statute and rules made thereunder or any modification to the Acts/ Statute or rules made thereunder, all after seven (7) days prior to the date set for opening of the Techno-Commercial Bids and as a consequence thereof, the Contractor has to incur additional cost or expenditure, the same will be reimbursed by the Employer to the Contractor, excepting those due to reasons attributable to the Contractor and those being already compensated by other provisions of the Contract, like Price Adjustment, Taxes and Duties etc. 51.4.4 It is specifically agreed that the Contractor and his Sub-Contractors shall obtain all the necessary registration, licenses, permits, authorizations etc. required under various enactments/ Regulations enforced from time to time, specifically registration as employer under Provident Fund Act and Contract Labor Regulation & Abolition Act, and the Employer shall not be liable for any violation by the Contractor in this regard. 51.4.5 The employees of the Contractor or his Sub-Contractor(s) shall in no case be treated as the employees of the Employer at any point of time.

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
			51.4.6 The Contractor and his Sub-Contractors shall be liable to make all due payments to all their employees and ensure compliance with labor laws. If the Employer, is held liable as 'PRINCIPAL EMPLOYER' or otherwise to incur any expenditure or to make any contributions under any legislation of the Government or Court decision, in respect of the employees of the Contractor or his Sub-Contractors, then the Contractor would reimburse the amounts of such expenditure/contribution so made by the Employer. 51.4.7 In case the ESI act is not applicable to the area where the Work is executed, as evidenced by the Certificate/Letter submitted to this effect from the local authorities, the Contractor shall be liable to arrange and pay for the expenses towards the medical treatment in respect of all labor employed by him for the execution of the Contract. 51.4.8 The number and other relevant details of key personnel required to be engaged/ employed by the Contractor in all areas shall be finalized with the successful bidder during post bid discussions (if required). During the entire period of Contract, the Contractor and his Sub-Contractors shall, at all times abide by the following Acts/ Statutes related to Human Resources: 1. Factories Act, 1948; Contract Labor (Regulation & Abolition) Act, 1970; 2. EPF & MP Act, 1952; 3. Building & Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996; 4. ESI Act, 1948; 5. Minimum Wages Act, 1948; 6. Payment of Wages Act, 1936; 7. Payment of Bonus Act, 1965; 8. Payment of Gratuity Act, 1972; 9. Workmen's Compensation Act, 1923; 10. ID Act, 1947; 11. Maternity Benefit Act, 1961; 12. Inter-State Migrant Workmen (Regulation of Employment & Conditions of Service) Act, 1979; 13. Fatal Accidents Act, 1855 14. Model Welfare Code The above will deem to include all relevant/applicable rules made thereunder, regulations, notifications and bye laws of the State or Central Govt. or the local authority and any other labor law (including rules) regulations, bye laws as well as those that may be passed or notification that may be issued under any labor law present and in future either by State or Central Govt. or by local authority.

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
			quarried or mined metal, minerals or minor minerals are paid to the statutory authorities. 58.2.2 The component of Royalties or Seigniorage Fee or Cess or other charges, if applicable in a running account bill, shall only be released by the Employer to the Contractor on submission of the following documents in original: A) In case the Contractor is the primary license holder of the quarry / mines: i) Vehicle wise challan / transit permit and proof of payment of royalty, and ii) Any other document required as per the relevant Acts/Rules of the concerned state. B) In case the Contractor is the purchaser of soil/earth, sand, stone/aggregates, metals, minerals or minor minerals: i) Purchase voucher and vehicle wise challan / transit permit and proof of payment of royalty, and ii) Any other document required as per the relevant Acts/Rules of the concerned state. 58.2.3 In case the Contractor fails to provide the required proof of royalty payment with the RA bill then an amount based on the prevailing rates of the royalty shall be retained from the respective RA bill, as security against royalty, which shall be refunded to the Contractor on submission of proof of royalty payment. 58.2.4 The Contractor shall pay and indemnify the Employer against any default in payment of Royalties or Seigniorage Fee or Cess or other charges by the Contractor or the agency from which the Contractor purchases soil/earth, sand, stone/aggregates, metals, minerals or minor minerals. 58.2.5 In the event of there being a statutory increase in the rates of royalty charges/fresh levy of royalty on materials, the same shall be reimbursed to the Contractor upon submission of original challan by him of having made the payments at revised rates. In the event of there being a decrease in such rates, the same shall be recovered from the Contractor. The base date for calculating the increase or decrease shall be the rate as on seven (7) days prior to the deadline set for Price Bid submission. The total reimbursement (positive or negative) as specified above, to be paid or recovered, shall however be calculated on the quantity of materials actually considered while making the royalty payments to the concerned authorities, or the theoretical consumption of these materials (calculated on the basis of the volume of concrete or fill accepted for payment), whichever is less, and on the basis of documentary evidence of Govt. Notification. However, the Contractor will settle claims, if any, on account of over charge by the State Authorities.

Clause No.			GENERAL CONDITIONS OF CONTRACT (GCC)
59	Procedure for Contract Closing	59.1	The closing of the contract shall be effected after the warranty period/Defect Liability Period is successfully completed and the CPG of the Contractor is returned/ discharged.
		59.2	The thirteen (13) certificates (details as per Annexure-III to SCC), as per the proforma enclosed in Section VII (Forms and Procedures), shall be issued by the 'concerned departments of NTPC'/ 'Contractor', as applicable, and submitted to the concerned authority designated in NTPC for closing of Contracts.
		59.3	Both the Contractor and the Employer will make necessary efforts to complete the Contract Closing activities as per the timelines as mentioned at clause 59.2 above. It shall be the responsibility of the contractor to submit the drawings alongwith the reproducibles, QA documents, O&M Manuals, List of Spares, As Built drawings, deliverables, etc., as applicable, in a timely and sequential manner so that the contract closing activities are not delayed/impeded. The Employer shall also use its best endeavors to expedite all activities leading to successful closure of the contract. The Employer will review and approve the documents submitted by the Contractor in a timely and expeditious manner and the approvals shall not be unreasonably withheld.

SECTION – V

SPECIAL CONDITIONS OF CONTRACT

SPECIAL CONDITION OF CONTRACT (SCC)**SECTION - V****SPECIAL CONDITIONS OF CONTRACT**

The following Special Conditions of Contract (SCC), Section-V, shall supplement/amend the General Conditions of Contract (GCC), Section-IV. Wherever there is a conflict, the provisions in SCC shall prevail over those in the GCC. The corresponding clause number of the GCC is indicated in parentheses.

Name of Package: EPC Package for KODERMA THERMAL POWER STATION PH-II (2X800MW)

Document No.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

Special Conditions (SCC) No.	GCC Clause Ref., if any	Special Conditions						
1.	Definitions (GCC Clause 1)	“Employer” or "DVC" shall mean Damodar Valley Corporation, Established by the ACT XIV of 1948 having its registered office at DVC Towers, VIP Road, Kolkata- 700054, India and shall include their legal representatives, successors, administrators, executors and permitted assigns. 'NTPC' shall mean NTPC Limited, a Company incorporated under the Companies Act, 1956, having its registered office at Core-7, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi- 110 003 and shall include their legal representatives, successors and permitted assigns which shall provide Consultancy Services to DVC for Koderma Thermal Power Station Phase-II (2x800MW). The Employer is: <table><tr><td>Name of Employer</td><td>Damodar Valley Corporation, (Established by the ACT XIV of 1948)</td></tr><tr><td>Address of Employer</td><td>Registered Office DVC Towers, VIP Road, Kolkata- 700054</td></tr><tr><td></td><td>Correspondence Address: General Manager (E), C&M Department, DVC, DVC Towers, VIP Road, Kolkata-700054 E-mail: Tel No.</td></tr></table>	Name of Employer	Damodar Valley Corporation, (Established by the ACT XIV of 1948)	Address of Employer	Registered Office DVC Towers, VIP Road, Kolkata- 700054		Correspondence Address: General Manager (E), C&M Department, DVC, DVC Towers, VIP Road, Kolkata-700054 E-mail: Tel No.
Name of Employer	Damodar Valley Corporation, (Established by the ACT XIV of 1948)							
Address of Employer	Registered Office DVC Towers, VIP Road, Kolkata- 700054							
	Correspondence Address: General Manager (E), C&M Department, DVC, DVC Towers, VIP Road, Kolkata-700054 E-mail: Tel No.							

The Project Manager is:

Name of Project Manager	Head of Project KODERMA THERMAL POWER STATION PH-II (2X800MW)
Address of Project Manager	KODERMA THERMAL POWER STATION PH-II (2X800MW) District – Koderma, State – Jharkhand.

Time for Completion:

“Completion of facilities” for different units will be as under:

Unit no.	Completion of Facilities (No. of months from the date of NOA)
Unit # 1	48
Unit # 2	52

Bidders to refer detailed schedule also as specified in the BDS.

2.0 Definitions GCC 1 Add the following at the end of Clause:

For the purpose of these Contract Documents, 'Commercial Operation' shall mean the conditions of operation in which each one unit of 800 MW is officially declared by the Employer to be available for continuous operation at different loads upto and including rated capacity. However, such declaration by the Employer shall not have prejudice to any of the rights and obligations of Employer and Contractor under the Contract.

For the purpose of GCC clause 24 (Completion of the Facilities), GCC clause 25 (Commissioning, Guarantee Tests and Operational Acceptance), GCC clause 26 (Completion Time Guarantee) and GCC clause 27 (Defect Liability), part of facilities shall mean each one unit of 800 MW.

2.1 The terms 'Subcontractor' and 'Sub vendor' are interchangeable and they have the same meaning as defined under "Subcontractor" in GCC Clause No. 1.

2.2 Employer means Damodar Valley Corporation, established by the ACT XIV of 1948 having its registered office at DVC Towers, VIP Road, Kolkata- 700054, India and shall include their legal representatives, successors, administrators, executors and permitted assigns.

3.0 Interpretation GCC 3.10 The word "Joint Venture or consortium" in GCC Clause 3.10 stands deleted

4.0 Deleted

5.0 **Scope of Facilities**
(GCC Clause 3)
(GCC Clause 7)

GCC Cl. 7.3.1.2 Replace Existing GCC Clause with the following :

The Mandatory Spares covered under the Contract shall be produced in phased manner and the delivery would be completed by the respective dates as per the mutually agreed despatch schedule. In case of Recommended Spares the above will be applicable provided the order for the Recommended Spares have been placed with the Contractor prior to commencement of manufacture of the main equipment.

6.0 Time for Commencement and Completion
(GCC Clause 8)
GCC 8.2

"Completion of facilities" for different units will be as under:

Unit no.	Completion of Facilities (No. of months from the date of NOA)
Unit # 1	48
Unit # 2	52

Bidders to refer detailed schedule also as specified in the BDS.

7.0 **Securities**
(GCC Clause 13)

GCC 13.3.3 Add following para to GCC clause 13.3.3

Values of the Contract Performance Securities furnished by Main Contractor and its Assignee (if applicable) shall be reduced to 50% of their original values on expiry of ninety (90) days after actual completion of defect liability period of all facilities relating to Unit-I.

In case defect liability period for certain equipment(s) of a unit finishes after the end of defect liability period for that unit, then, the Contract Performance Securities for the package shall be reduced as given in above para or discharged, as applicable, upon completion of defect liability period for that unit, after additional securities for ten percent (10%) of value of these equipment(s) is furnished by the contractor. For the purpose of this clause, value of these equipment(s) shall be based on the prices given in the Contract and/or as mutually agreed. These additional securities shall be initially valid till ninety (90) days beyond the end of defect liability period for these equipment(s). In case of delay in completion of defect liability period for these equipment(s), the validity of these additional securities shall be extended by such period of delay.

These additional securities shall be in the form of unconditional Bank Guarantee(s) in line with GCC Sub-Clause 13.3.2 and in the currency of Contract Price for these equipment(s). Further, the Bank Guarantee(s) shall be in line with provision of SCC clause 8 (GCC 13.5).

GCC 13.4

Add a new GCC Sub-Clause 13.4

13.4 Security for Deed of Joint Undertaking

In case Deed(s) of Joint Undertaking (DJU) by the Contractor along with his Collaborator(s)/ Promoters to the Subsidiary Company / Promoter to JV Company / Subsidiary Company / JV Company/ Subsidiary company of Indian manufacturing Company/Parent Company of Indian Majority stake holder in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company form part of the Contract, then, in addition to the Contract performance securities furnished by the Contractor, the Collaborator(s)/ Promoters to the Subsidiary Company / Promoter to JV Company / Subsidiary Company / JV Company shall furnish, within twenty eight (28) days of the Notification of Award, separate unconditional Bank Guarantee(s) towards faithful performance of the Deed(s) of Joint Undertaking for amount(s) specified in Item No. 4.0 of Bid Data Sheets and with validity till such period as specified in the corresponding format for Deed of Joint Undertaking. However, in case of delay in completion of defect liability period, the validity of Bank Guarantee(s) submitted towards faithful performance of Deed(s) of Joint Undertaking shall be extended by such period of delay.

Further within twenty eight (28) days after receipt of the notification of award, the successful Bidder shall furnish the performance securities in favour of Employer **for INR 900,000,000/- for Steam Generator sets and INR 650,000,000/- for Steam Turbine Generator sets** in the form provided in the Section-Forms and Procedures of the bidding documents for successful implementation of Phased Manufacturing Programme.

Among the Bidders and its associate(s) who have already given commitments for PMP and submitted bank guarantees for security for default against specified PMP for Steam Turbine generators / Steam Generators to any Central / State sector power generating Company for supercritical projects or if such bank guarantees have already been released shall not be required to furnish further bank guarantees for security for default against specified PMP.

The Bank Guarantee(s) shall be denominated in the currency or currencies of Contract and shall be as per the proforma provided in Section-VII (Forms and Procedures) - Form of Bank Guarantee to the furnished by executant of DJU other than Contractor.

GCC 13.5

Replace GCC sub-clause 13.5 as under:

13.5 The Bank Guarantees submitted towards Advance Payment Security, Contract Performance Security and Security in

compliance to the Deed of Joint Undertaking and Performance Security regarding implementation of Phased Manufacturing Programme (PMP) shall be essentially from any of the Banks listed at **Annexure-I** to Section-V (Special Conditions of Contract) of the bidding documents. In case of guarantees issued by branches outside India for foreign banks, the bank guarantees shall be routed through the correspondent Bank in India for due verification of signatures of the executants and lodgement of claim.

The bank guarantee submitted from within India towards Advance Payment Security, Contract Performance Security and Security for Deed of Joint Undertaking and Performance Security regarding implementation of PMP shall be issued on a stamp paper of value as applicable in the State of the issuing Bank in India or the State of West Bengal or the State from where the BG shall be operated, whichever is higher.

Where a BG issued by a Bank outside India also needs to bear Stamp Duty of appropriate value applicable to the place in Employer where BG is to be submitted, the BG will be adjudicated from Collector of Stamps, within 3 months of arrival of BG in India and the expenses incurred in this regard shall be recovered from the Contractor.

8.0 Guarantee Tests and Operational Acceptance (GCC Clause 25)

GCC 25.2

Notwithstanding GCC Clause 25.2 to the extent applicable, the Guarantee test of the facilities (or part thereof, if applicable) shall be successfully completed within the timelines specified in Sec-VI (Technical Specifications).

9.0 Completion Time Guarantee (GCC clause 26)

GCC 26.2

Applicable rate for Liquidated Damages

Liquidated Damages for delay in successful completion of Facilities shall be as under :

i) It is expressly understood and agreed that if the contractor fails to achieve successful Completion of facilities within the agreed work schedule, the Contractor shall pay to the Employer as liquidated damages and not as penalty, a sum calculated at the following rates :

A sum of USD 190,023 (US Dollar One Hundred Ninety- Thousand Twenty-Three Only) or equivalent amount in contract	for each day of delay in successful Completion of Facilities of each Unit under the package as per the scope of work of the Contractor

currencies, if different than US Dollar based on bills selling exchange rate of SBI prevailing as on the date of Notification of Award	under the Contract for first 112 days delay.
A sum of USD 269,199 (US Dollar Two Hundred Sixty-Nine Thousand One Hundred Ninety-Nine Only) or equivalent amount in contract currencies, if different than US Dollar based on bills selling exchange rate of SBI prevailing as on the date of Notification of Award	for each day of delay in successful Completion of Facilities of each Unit under the package as per the scope of work of the Contractor under the Contract after first 112 days delay.

ii) The Liquidated Damages for delay in supply of spares beyond the dates stipulated under the Contract shall be as follows:

One half of one percent (1/2%) of CIF (Indian port-of-entry)/ Ex-works (India) price of the delayed Mandatory Spares, per week or part thereof of delay, subject to maximum of five percent (5%) of the total CIF / Ex-works price of all mandatory spares included in the Scope of Work of the Contractor under the Contract.

iii) Maximum deduction for Liquidated Damages:

The total amount of Liquidated Damages for delay under the contracts will be subject to a maximum of 7.5 % of the total contract price (Total of First, Second & Third contract).

**10.0 Defect Liability
(GCC Clause 27)**

GCC 27.10

The critical components covered under the extended warranty as specified in Technical Specification are the mill wear parts.

Further, in case the Steam Generator Manufacturer has an evaporator in the reference Steam Generator designed for constant pressure (universal pressure) operation only and has an ongoing license agreement (which covers technology transfer) with the original Technology Owner (licensor) for design, manufacture, sell, use, service of once through variable pressure super critical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and super critical pressure ranges), Contractor shall furnish an extended warranty of at least one year for successful performance of Steam Generator as detailed in the Technical Specification.

**11.0 Functional Guarantee
(GCC Clause 28)**

Following to be read in conjunction with Functional Guarantee wherever appearing

The words "Appendix-8 (Functional Guarantee)" appearing in the GCC Clause 28 and at any other places in bidding documents shall be read in

conjunction with Technical Specification, Section-VI of Bidding Documents.

12.0

New Clause

Add a New Clause 60 as below:**Phased Manufacturing Programme (PMP)**

12.1

It is mandatory for the contractor to set up manufacturing facility in India for manufacture of Supercritical Steam Generators and Supercritical Steam Turbine Generators in India either by himself or through its subsidiaries or through Joint Venture (JV) Company in a phased manner as per the phased manufacturing programme (PMP) indicated at SCC No. 12.2.

The Mandatory Equity participation as applicable, in such Indian Subsidiary Company/ JV Company & the minimum lock-in period for such equity in the subsidiary company or JV company shall be as under:

(a) **Subsidiary Company**

The subsidiary company shall remain subsidiary company of the Qualified Steam Generator Manufacturer AND/OR the Qualified Steam Turbine Generator Manufacturer for a minimum period of seven (7) years from the date of incorporation of such subsidiary company or upto the end of defect liability period of this contract whichever is later in case the contractor is Qualified Steam Generator Manufacturer AND/OR Qualified Steam Turbine Generator manufacturer or Indian Subsidiary company of Qualified Steam Generator Manufacturer AND/OR Qualified Steam Turbine Generator manufacturer.

(b) **JV Company**

The Qualified Steam Generator Manufacturer AND/OR the Qualified Steam Turbine Generator manufacturer shall maintain a minimum equity of 26% in JV company for a lock in period of seven (7) years from the date of incorporation of such JV company or up to the end of defect liability period of this contract whichever is later, in case the contractor is Qualified Steam Generator Manufacturer AND/OR Qualified Steam Turbine Generator manufacturer or Indian Joint Venture (JV) company or Indian Company holding at least 51% equity in a Joint Venture company.

One of the promoters shall be a majority stakeholder who shall maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of such JV company or up to the end of defect liability period of this contract whichever is later.

(c) **Subsidiary registered for manufacturing Supercritical Steam Generator AND/OR Supercritical Steam Turbine Generator in India shall remain subsidiary of Indian Manufacturing Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of the Indian manufacturing company or up to the end of Defect Liability period of the contract, whichever is**

later in case the contractor is Qualified Steam Generator Manufacturer AND/OR Qualified Steam Turbine Generator Manufacturer or Indian Subsidiary Company / JV Company or Indian Company holding at least 51% equity in the JV Company.

Note: In case of participation of a separate Qualified Generator Manufacturer, he shall maintain a minimum equity participation of 10% in the Indian Subsidiary Company or the Indian JV Company (as the case may be), for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary Company or Indian JV Company (as the case may be) or up to the end of defect liability period of this contract whichever is later.

12.2 The Major Milestone Schedule for Phased Manufacturing Programme (PMP) with weightage factor (%age) for LD is as under:

(A) **For Steam Generator & Auxiliaries**

Sl. No.	Equipment	Indicative Facilities Requirement	To be established latest by (Month from Date of Award)	Weightage factor (%age) for LD
1.	Pressure Parts (straight water wall & spiral water wall)	* Straight tube butt welding facility * Automatic welding facility for panel processing * NDT facilities * Hydro testing * Continuous heat treatment furnace * Gang/panel bending facility (for straight water wall & spiral water wall tube panels)	36	35
2.	Pressure Parts (economiser, super heater and reheater coils and panels)	* System bend facility * Welding facility for coils * NDT facilities * Hydro testing * Continuous heat treatment furnace * Jigs & fixtures for assembly and layout checking facility * Portable equipment for material/grade identification	42	30
3.	Pressure Parts (headers)	* Welding * Machining & drilling * Heat treatment * Hydraulic testing * NDT facilities * Pressing facility for end caps & tees * Material identification facility * Facility for high alloy (P5 and above) continuous welding	42	20
4.	Separator (shell and dished ends)	* Rolling facility/pressing facility * Machining & drilling * Welding * Heat treatment * Hydraulic testing	48	15

SPECIAL CONDITION OF CONTRACT (SCC)



- * NDT facilities
- * Pressing arrangements for dished ends

(A) For Steam Turbine Generator & Auxiliaries

Sl. No.	Equipment	Indicative Facilities Requirement	To be established latest by (Month from Date of Award)	Weightage factor (%age) for LD
1.	Turbine Casings and Valves machining	* LP outer Casing fabrication * HP/IP/LP Casing Machining & blading * Heat Treatment/Stress Relieving * Turbine valve machining & assembly testing	36	20
2.	Turbine Rotor machining	* Rotor machining including grooves & Fir Tree machining * Rotor assembly and balancing * Turbine assembly	42	20
3.	Rotating blades machining	* Rotating Blade machining & finishing	52	20
4.	Generator Core and stator manufacturing	* Core stamping, fabrication facility * Heat Treatment/Stress Relieving * Generator Stator Fabrication and core building facility * Stator bar manufacturing and heavy machining facility for fabricated Items.	40	20
5.	Generator Rotor	* Rotor machining including slotting * Rotor assembly and balancing * Exciter manufacturing & testing * Rotor winding facility	42	15
6.	Generator Assembly	* Generator assembly and testing	48	5

12.3 For the Contractor, having already undertaken commitments for PMP in the Bulk order for supercritical units (or any other order under earlier projects of Central/State Sector Power Generating Company)

Such Contractor shall be required to undertake manufacturing activities as indicated in SCC Clause 30.2 above in the indigenous manufacturing facilities set up under the PMP for the supplies made to this project after completion of time period as specified for PMP from the date of award of such first order. The same shall be demonstrated to the entire satisfaction of the owner.

12.4 A standing committee under CEA with members from Ministry of Heavy Industries and the participating utilities would be authorized (within the ambit of the contract) to monitor the progress of implementation of Phased Manufacturing Programme (PMP).

The imposition of LD, if any, would be based on recommendation of this Standing Committee. For such purposes Monitoring Committee shall be

12.5

provided necessary access to Contract's manufacturing premises and the Contractor shall provided details of progress/plans as and when required.

Liquidated Damage (LD) for delay in Phased Manufacturing Program (PMP)

The amount of Liquidated Damage for delay to meet, various milestones of phased manufacturing program for manufacturing of Supercritical Steam Generator sets and Supercritical Steam Turbine Generator sets in India will be subject to **maximum of USD 25 Million and USD 9 Million respectively.**

LD for each milestones shall be proportionate to weightage factor assigned to various manufacturing process. Total LD for a milestone shall be recovered within 10 weeks delay from the respective milestone target dates. For delays less than 10 weeks, the LD shall be calculated on Pro-rated basis. The Liquidated Damages for delay in Phased Manufacturing Program shall be independent of Liquidated Damages for delay in completion of facilities. The Schedule for Phased Manufacturing Programme (PMP) with Weightage factor (%age) for LD is as indicated at SCC No. 12.2.

13.0

Replace GCC Clause 42.2.2 through SCC as under:

- 42.2.2 (i) If the Contractor
- (a) has abandoned or repudiated the Contract
 - (b) has without valid reason failed to commence work on the Facilities promptly or has suspended (other than pursuant to GCC Sub-Clause 41.2) the progress of Contract performance for more than twenty-eight (28) days after receiving a written instruction from the Employer to proceed
 - (c) persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract without just cause
 - (d) refuses or is unable to provide sufficient materials, services or labour to execute and complete the Facilities in the manner specified in the program furnished under GCC Clause 18 (Program of Performance) at rates of progress that give reasonable assurance to the Employer that the Contractor can attain Completion of the Facilities by the Time for Completion as extended
- (ii) *If the Executant(s) of DJU(s)/Letter(s) of Undertaking (other contractor)/Collaborator(s)/Associate(s)/Licensor(s)/Technology Providers(s) fails to carry out its obligations, in connection with the Contract*

then the Employer may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within fourteen (14) days of its receipt of such notice, then the

Employer may terminate the Contract forthwith by giving a notice of termination to the Contractor that refers to this GCC Sub-Clause 42.2.

14.0 General The instruments such as Letter of Undertakings, Deed of Joint undertakings etc which are presently specified to be furnished on non-judicial stamp paper of appropriate/requisite value, shall be stamped as per Indian Stamp Act.

15.0 General Throughout the Bidding Documents (including amendment) Ex-works (India) shall mean EXW (India)

16.0 **ANNEXURES TO SCC**

1. ANNEXURE-I: LIST OF BANKS
2. ANNEXURE-II: Debarment Policy
3. ANNEXURE-III: Score Based Feedback Format
4. ANNEXURE-IV: NTPC SAFETY RULES FOR CONSTRUCTION AND ERECTION OF POWER PLANTS
5. ANNEXURE-V : DETAILS OF CERTIFICATES REGARDING CONTRACT CLOSING
6. ANNEXURE-VI: Competent Authority for the purpose of registration
7. ANNEXURE-VII: Fraud Prevention Policy of the Employer

**LIST OF BANKS ACCEPTABLE FOR SUBMISSION
OF BANK GUARANTEE FOR ADVANCE PAYMENTS, PERFORMANCE SECURITIES AND
SECURITIES FOR DEED OF JOINT UNDERTAKING**

LIST OF COMMERCIAL BANKS AS PER RBI (SOURCE RBI WEBSITE DT. 08-06-2012)

A. List of Scheduled Public Sector Banks:

1. State Bank of India
2. Bank of Baroda (Including Vijaya Bank and Dena Bank)
3. Bank of India
4. Bank of Maharashtra
5. Canara Bank (Including Syndicate Bank)
6. Central Bank of India
7. Indian Bank (Including Allahabad Bank)
8. Indian Overseas Bank
9. Punjab National Bank (including Oriental Bank of Commerce and United Bank of India)
10. Punjab & Sind Bank
11. Union Bank of India (including Andhra Bank and Corporation Bank)
12. UCO Bank

B. List of Scheduled Private Sector Banks

1. Axis Bank Ltd.
2. Bandhan Bank Ltd.
3. CSB Bank Ltd.
4. City Union Bank Ltd.
5. DCB Bank Ltd.
6. Dhanlaxmi Bank Ltd.
7. Federal Bank Ltd.
8. HDFC Bank Ltd
9. ICICI Bank Ltd.
10. IndusInd Bank Ltd
11. IDFC First Bank Ltd.
12. Jammu & Kashmir Bank Ltd.
13. Karnataka Bank Ltd.
14. Karur Vysya Bank Ltd.
15. Kotak Mahindra Bank Ltd
16. Lakshmi Vilas Bank Ltd.
17. Nainital Bank Ltd.
18. RBL Bank Ltd.
19. South Indian Bank Ltd.
20. Tamilnad Mercantile Bank Ltd.
21. YES Bank Ltd.
22. IDBI Bank Ltd.

C. List of Scheduled Small Finance Banks

1. Au Small Finance Bank Limited
2. Capital Small Finance Bank Limited
3. Equitas Small Finance Bank Limited

4. Suryoday Small Finance Bank Limited
5. Ujjivan Small Finance Bank Limited
6. Utkarsh Small Finance Bank Limited
7. ESAF Small Finance Bank Limited
8. Fincare Small Finance Bank Limited
9. Jana Small Finance Bank Limited
10. North East Small Finance Bank Limited
11. Shivalik Small Finance Bank

D. Limited List of Scheduled Payments Banks

1. India Post Payments Bank Limited
2. Fino Payments Bank Limited
3. Paytm Payments Bank Limited

F. List of Scheduled Foreign Banks in India

1. Australia and New Zealand Banking Group Ltd.
2. Westpac Banking Corporation
3. Bank of Bahrain & Kuwait BSC
4. AB Bank Ltd.
5. Sonali Bank Ltd.
6. Bank of Nova Scotia
7. Industrial & Commercial Bank of China Ltd.
8. BNP Paribas
9. Credit Agricole Corporate & Investment Bank
10. Societe Generale
11. Deutsche Bank
12. HSBC Ltd
13. PT Bank Maybank Indonesia TBK
14. Mizuho Bank Ltd.
15. Sumitomo Mitsui Banking Corporation
16. MUFG Bank, Ltd.
17. Cooperatieve Rabobank U.A.
18. Doha Bank
19. Qatar National Bank
20. JSC VTB Bank
21. Sberbank
22. United Overseas Bank Ltd
23. FirstRand Bank Ltd
24. Shinhan Bank
25. Woori Bank
26. KEB Hana Bank
27. Industrial Bank of Korea
28. Kookmin Bank
29. Bank of Ceylon
30. Credit Suisse A.G
31. CTBC Bank Co., Ltd.
32. Krung Thai Bank Public Co. Ltd.
33. Abu Dhabi Commercial Bank Ltd.
34. Mashreq Bank PSC

ANNEXURE-I TO SPECIAL CONDITIONS OF CONTRACT

35. First Abu Dhabi Bank PJSC
36. Emirates Bank NBD
37. Barclays Bank Plc.
38. Standard Chartered Bank
39. NatWest Markets Plc
40. American Express Banking Corporation
41. Bank of America
42. Citibank N.A.
43. J.P. Morgan Chase Bank N.A.
44. SBM Bank (India) Limited*
45. DBS Bank India Limited*
46. Bank of China Ltd.

[* Note: SBM Bank (India) Limited (Subsidiary of SBM Group) and DBS Bank India Limited (Subsidiary of DBS Bank Ltd.) have been issued licence on December 06, 2017 and October 04, 2018 respectively for carrying on banking business in India through Wholly Owned Subsidiary (WOS) mode. They have commenced operations as WOS with effect from December 01, 2018 and March 01, 2019.]

	DAMODAR VALLEY CORPORATION (ESTABLISHED BY ACT XIV OF 1948)	Page 1 of 8

1.0 Debarment Policy

Debarment:

Registration of suppliers/ contractors/ consultants/ service providers and their eligibility to participate in DVC's procurements is subject to **compliance with Code of Integrity for Public Procurement and good performance in contracts.**

Debarment from Bidding: -

- I. A bidder shall be debarred if he has been convicted of an offence-
 - a) Under the Prevention of Corruption Act, 1988; or
 - b) The Indian Penal Code or any other law for the time being in force, for causing any loss of life or property or causing a threat to public health as part of execution of a public procurement contract.
- II. A bidder debarred under sub-section (I) or any successor of the bidder shall not be eligible to participate in a procurement process of DVC for a period not exceeding three years commencing from the date of debarment.

Department of Commerce (DGS&D) will maintain such list which will also be displayed on the website of DGS&D as well as Central Public Procurement Portal.

- III. DVC may debar a bidder or any of its successors, from participating in any procurement process undertaken by it, for a period not exceeding two years, if it determines that the bidder has breached the code of integrity. DVC will maintain such list which will also be displayed on its website.
- IV. The bidder shall not be debarred unless such bidder has been given a reasonable opportunity to represent against such debarment.

1.1 Guidelines on Debarment of firms from Bidding: -

The guidelines are classified under following two types: -

- i. In cases where debarment is proposed to be limited to DVC, the appropriate Orders can be issued by DVC itself, thereby banning all its business dealing with the debarred firm.
- ii. Where it is proposed to extend the debarment beyond the jurisdiction of DVC i.e. covering to all central Ministries/ Departments, the requisite Orders shall be issued by Department of Expenditure (DoE), Ministry of Finance (MoF).

A. Definitions:

1. **Firm:** The term 'firm' or 'bidder' has the same meaning for the purpose of these Guidelines, which includes an individual or person, a company, a cooperative society, a Hindu undivided family and an association or body of persons, whether incorporated or not, engaged in trade or business.



2. **Allied firm:** All concerns which come within the sphere of effective influence of the debarred firms shall be treated as allied firms. In determining this, the following factors may be taken into consideration:
- Whether the management is common;
 - Majority interest in the management is held by the partners or directors of banned/suspended firm;
 - Substantial or majority shares are owned by the banned/ suspended firm and by virtue of this it has a controlling voice.
 - Directly or indirectly controls, or is controlled by or is under common control with another bidder.
 - All successor firms will also be considered as allied firms.
3. The terms “banning of firm”, ‘suspension’, ‘Black-Listing’ etc. convey the same meaning as of “Debarment”.

B. Debarment of Firms only in DVC

- Orders for Debarment of a firm/Contractor irrespective of whether it is known/approved or otherwise, shall be passed by DVC with the approval of HOP (in case the Contract issued from site/ ED (C&M) in case the Contract issued from HQ), keeping in view of the following:
 - A bidder or any of its successors may be debarred from participating in any procurement process for a period not exceeding two years.
 - Firms will be debarred if it is determined that the bidder has breached the **code of integrity as mentioned in clause 2** below.
 - A bidder can also be debarred for any actions or omissions by the bidder other than violation of code of integrity, which in the opinion of DVC, warrants debarment for the reasons like supply of sub-standard material, non-supply of material, abandonment of works, sub-standard quality of works, failure to abide “Bid Securing Declaration” etc.
 - Before issuing the debarment order against a firm, it is to be ensured that reasonable opportunity has been given to the concerned firm to represent against such debarment (including personal hearing, if requested by firm).
 - DVC will maintain list of debarred firms, which will also be displayed on its website and it shall not be circulated to other Ministries / Department. It will only be applicable to all establishment of DVC.
 - Debarment is an executive function and should not be allocated to Vigilance Department.

2. Code of Integrity is reproduced as under:

2.1 Public procurement is perceived to be prone to corruption and ethical risks. To mitigate this,



the officials of DVC and the bidders/ suppliers/ contractors/ consultants/ service providers involved in procurement process must abide by the following Code of Integrity for Public Procurement (CIPP). All Procuring officials may be asked to sign declarations to this effect periodically and in various Procurement decisions (including Need Assessment). The bidders/ suppliers/ contractors/ consultants/ service providers should be asked to sign a declaration for abiding by a Code of Integrity for Public Procurement in registration applications and in bid documents, with a warning that, in case of any transgression of this code, its name is not only liable to be removed from the list of registered suppliers/ contractors/ consultants/ service providers, but it would be liable for other punitive actions such as cancellation of contracts, banning and blacklisting or action in Competition Commission of India, and so on.

2.2 Procuring authorities as well as bidders, suppliers, contractors and consultants/ service providers should observe the highest standard of ethics and should not indulge in the following prohibited practices, either directly or indirectly, at any stage during the procurement process or during execution of resultant contracts:

- a) **“Corrupt practice”**: making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;
- b) **“Fraudulent practice”**: any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in execution of the contract;
- c) **“Anti-competitive practice”**: any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act, 2002, between two or more bidders, with or without the knowledge of the procuring entity, that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non- competitive levels;
- d) **“Coercive practice”**: harming or threatening to harm, persons or their property to influence their participation in the procurement process or affect the execution of a contract;
- e) **“Conflict of interest”**: participation by a bidding firm or any of its affiliates that are either involved in the consultancy contract to which this procurement is linked; or if they are part of more than one bid in the procurement; or if the bidding firm or their personnel have relationships or financial or business transactions with any official of DVC who are directly or indirectly related to tender or execution process of contract; or improper use of information obtained by the (prospective) bidder from DVC with an intent to gain unfair advantage in the procurement process or for personal gain; and
- f) **“Obstructive practice”**: materially impede DVC's investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and/ or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the procuring entity's rights of audit or access to information.

Note on Conflict of Interest in case of consultants:



- i) The consultant is required to provide professional, objective, and impartial advice, at all times holding the Procuring Entity's interests paramount, strictly avoiding conflicts with other assignments or his/its own corporate interests, and acting without any consideration for future work.
- ii) The consultant has an obligation to disclose to the Procuring Entity any situation of actual or potential conflict that impacts its/his capacity to serve the best interest of its client/Procuring Entity. Failure to disclose such situations may lead to the disqualification of the consultant or termination of its/his contract during execution of the assignment.
- iii) Without limitation on the generality of the foregoing, and unless stated otherwise in the data sheet for the RfP document, the consultant shall not be hired under the circumstances set forth below:
 - a) **Conflicting activities:** a firm that has been engaged by the client to provide goods, works, or non-consultancy services for a project, or any of its affiliates, shall be disqualified from providing Consultancy service resulting from or directly related to those goods, works, or non-Consultancy services. Conversely, a firm hired to provide consultancy services for the preparation or implementation of a project, or any of its affiliates, shall be disqualified from subsequently providing goods or works or no consultancy services resulting from or directly related to the consultancy services for such preparation or implementation;
 - b) **Conflicting assignments:** Consultants (including its experts and sub-- consultants) or any of their affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the consultant for the same or for another Procuring Entity; and
 - c) **Conflicting relationships:** A consultant (including its/his experts and sub-consultants) that has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in any part of: (i) the preparation of ToR for the assignment; (ii) selection process for the contract; or (iii) supervision of the contract, may not be awarded a contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the client throughout the selection process and execution of the contract.

2.3 Obligations for Proactive Disclosures:

- i) Procuring authorities as well as bidders, suppliers, contractors and consultants/ service providers, are obliged under Code of Integrity for Public Procurement to suo-moto proactively declare any conflicts of interest (coming under the definition mentioned above — pre-existing or as and as soon as these arise at any stage) in any procurement process or execution of contract. Failure to do so would amount to violation of this code of integrity; and
- ii) Any bidder must declare, whether asked or not in a bid document, any previous transgressions of such a code of integrity with any entity in any country during the last three years or of being debarred by any other Procuring Entity. Failure to do so would amount to violation of this code of integrity;
- iii) To encourage voluntary disclosures, such declarations would not mean automatic disqualification for the bidder making such declarations. The declared conflict of interest may be evaluated and mitigation steps, if possible, may be taken by the Procuring Entity. Similarly, voluntary reporting of previous transgressions of Code of Integrity elsewhere may be evaluated and barring cases of various grades of debarment, an alert watch may be kept on the bidders'



actions in the tender and subsequent contract.

2.4 Punitive Provisions: Without prejudice to and in addition to the rights of the Procuring Entity to other penal provisions as per the bid documents or contract, if the Procuring Entity comes to a conclusion that a (prospective) bidder/contractor/ Supplier/ consultant/ service provider, directly or through an agent, has violated this code of integrity in competing for the contract or in executing a contract, the Procuring Entity may take appropriate measures including one or more of the following:

- i) If his bids are under consideration in any procurement
 - a) Forfeiture or encashment of bid security
 - b) calling off of any pre-contract negotiations, and;
 - c) rejection and exclusion of the bidder from the procurement process
- ii) if a contract has already been awarded
 - a) Cancellation of the relevant contract and recovery of compensation for loss incurred by the Procuring Entity;
 - b) Forfeiture or encashment of any other security or bond relating to the procurement;
 - c) Recovery of payments made by the Procuring Entity along with interest thereon at the prevailing rate;
- iii) Provisions in addition to above:
 - a) Removal from the list of registered suppliers and banning/debarment of the bidder from participation in future procurements of the Procuring Entity for a period not less than one year;
 - b) In case of anti-competitive practices, information for further processing may be filed under a signature of the Member (Secretary), DVC, with the Competition Commission of India;
 - c) Initiation of suitable disciplinary or criminal proceedings against any individual or staff found responsible.

C. Debarment of Firms beyond the jurisdiction of DVC:

Where DVC is of the view that business dealings with a particular firm should be banned across all the Ministries/ Departments of GOI by debarring the firm from taking part in any bidding procedure floated by the concerned Central Government Ministries/ Departments, DVC after obtaining the approval of the Chairman, DVC, will forward to DoE, MoF, GOI with a self-contained note setting out all the facts of the case and the justification for the proposed debarment, along with all the relevant papers and documents. However, DVC, before forwarding the proposal to DoE, MoF, GOI will ensure that reasonable opportunity has been given to the concerned firm to represent against such debarment (including personal hearing, if requested by the firm).

If DoE, MoF, GOI realizes that sufficient opportunity has not be given to the firm to represent against the debarment, such debarment requests received from DVC shall be rejected.

DoE, MoF, GOI can also give additional opportunity, at their option, to firm to represent against proposed debarment. DoE, MoF, GOI can also take suo-moto action to debar the firms in certain circumstances. DoE, MoF, GOI will issue the necessary orders after satisfying itself



that proposed debarment across all the Ministries/ Departments is in accordance with Rule 151 of GFRs, 2017. This scrutiny is intended to ensure uniformity of treatment in all cases.

The firm will remain debarred only in DVC during the interim period till the final decision taken by DoE, MoF, GOI.

No contract of any kind whatsoever shall be placed on the debarred firm, including its allied firms by any Ministries/ Departments/ Attached/Subordinate offices of the Government of India including autonomous body, CPSUs etc. after the issue of a debarment order by DoE,

MoF, GOI. DoE, MoF, GOI will maintain list of such debarred firms, which will be displayed on Central Public Procurement Portal (CPPP).

D. Effect of Debarment/ Banning:

1. No new contract of any kind whatsoever shall be placed to debarred firm including its allied firms after the issue of debarment order by 'any establishment of DVC' / 'Ministry of Power- Govt. of India' / 'Department of Expenditure (DoE), Ministry of Finance (MoF) – as displayed on Central Public Procurement Portal (CPPP)' and the ban / suspension is still in force.

Bids from only such firms shall be considered for placement of contract, which are neither debarred on the date of opening of techno-commercial bid nor debarred on the date of issuance of LOA/PO/Work Order/LOA-cum-Work Order. Even in the cases of risk purchase, no contract should be placed on such debarred firms.

2. If case, any debar firms has submitted the bid, the same will be ignored. In case such firm is lowest (L-1), next lowest firm shall be considered as L-1. Bid security submitted by such debarred firms shall be returned to them.
3. Existing Contracts before issuance of debarment order shall not be affected by the debarment orders.
4. The Debarment shall be automatically extended to all its allied firms. In case of joint venture/ consortium is debarred all partners will also stand debarred for the period specified in Debarment Order. The names of partners should be clearly specified in the "Debarment Order".
5. Debarment in any manner does not impact any other contractual or other legal rights of the procuring entities.
6. The period of debarment shall start from the date of issue of debarment order.
7. The Order of debarment will indicate the reason(s) in brief that lead to debarment of the firm.
8. Ordinarily, the period of debarment should not be less than six months.
9. In case of shortage of suppliers in a particular group, such debarments may also hurt the interest of procuring entities. In such cases, endeavor should be to pragmatically analyze the circumstances, try to reform the supplier and may get a written commitment from the



supplier that its performance will improve.

E. Debarment Procedure:

- (i) User department or Engineer in charge will move the case which will be processed by Concerned C&M Head for Contract issued from site / CMM for Contract issued by HQ and put up for approval from HOP in case the Contract issued from site / ED (C&M) in case the Contract issued from HQ, after vetting of Legal Department. In cases where investigation has been carried out by Vigilance Department or CBI etc. the Notice of default will also be vetted by vigilance department before issuance. However, where TAA is Board or Chairman approval from concerned Member to be obtained.
- (ii) After obtaining approval, a Show Cause Notice will be issued by Concerned C&M Head for Contract issued from site / CMM for Contract issued by HQ indicating clearly and precisely the charges/misconduct which should be based on facts as can be proved as distinct from mere allegations.
- (iii) The firm/contractor may be given a period of 30 days to submit their representation if any, against the Show Cause Notice, including personal hearing if requested by firm.
- (iv) Thereafter, the appropriate debarment order may be issued by Concerned C&M Head for Contract issued from site / CMM for Contract issued by HQ, only after perusing the representation of the firm/contractor, if any, received in reply to Show Cause Notice incorporating the reasons for taking such action and vetting of Legal Department.

In case no reply to show cause notice is received within stipulated time, appropriate speaking order for debarment shall be passed ex-parte

- (vi) The order must specifically mention the fact that the reply to the show cause Notice, if any, has been considered by the said authority. The ex-parte order shall contain the fact that the reply to show cause notice has not been received within stipulated time.
- (vii) The entire process of banning to be completed within 45 days from the date of show cause notice.

F. Revocation of Debarment Orders by DVC:

- 1. An order for debarment passed shall be deemed to have been automatically revoked on the expiry of that specified period and it will not be necessary to issue a specific formal order of revocation.
- 2. A debarment order may be revoked before the expiry of the Order only with the approval by Chairman, DVC, if it is of the opinion that the disability already suffered is adequate in the circumstances of the case or for any other reason.
- 3. If an approved/known vendor/enlisted contractor is debarred by DVC and his name is delisted from the form the list of approved/known vendors/enlisted contractors, the name of the firm/contractor may not be included/ registered after the debarment period is over, unless the concerned Executive Director is satisfied that the said firm/contractor should be included in the list of approved/ known vendors/enlisted contractor.



G. Safeguarding DVC's Interests during debarment of supplier/ contractor/ consultant/ service provider:

Suppliers/ contractors/ consultants/ service providers are important assets for the procuring entities and punishing delinquent suppliers/ contractors/ consultants/ service providers should be the last resort. It takes lot of time and effort to develop, register and mature a new supplier. In case of shortage of suppliers/ contractors/ consultants/ service providers in a particular group of materials/equipment, such punishment may also hurt the interest of DVC. Therefore, views of the concerned department may always be sought about the repercussions of such punitive action on the continuity of procurements. Past records of performance of the supplier may also be given due weightage. In case of shortage of suppliers/ contractors/ consultants/ service providers and in cases of less serious misdemeanors, the endeavor should be to pragmatically analyse the circumstances, reform the supplier and get a written commitment from the supplier that his performance will improve. If this fails, efforts should be to see if a temporary debarment can serve the purpose.

PERFORMANCE REPORT OF CONTRACTOR

GUIDELINES FOR FILLING THE FORMAT

- 1.0 The feedback shall be based on records, evidences and documents (hindrance register, DPR, monthly PRT MoM, contractor's MPR, etc). Due diligence shall be taken to capture the actual progress, hindrances, if any from the monthly progress report to be submitted by the concerned agency. As Daily Progress Report / Weekly Progress Report / Monthly Progress Report are key documents / inputs for Vendor Performance measurement. Non-submission of the aforesaid documents may also be reckoned as poor performance.
- 2.0 For measurement of contractor performance in various activities in supply, site execution etc, the Contractor shall submit quantified L-2 schedule within 3 months after scheduled completion of Basic Engg or 180 days from date of award, whichever is earlier. Based on the progress of detailed Engg, quantified L-2 shall be updated as and when required.
- 3.0 This vendor performance rating system is applicable for a particular package being executed by the vendor. If the same vendor is executing multiple packages in a project or at number of Employer's projects, the performance report shall be prepared package wise and the screening committee may then take a final view for evaluating the overall performance of the vendor before initiating action for issuance of Notice for Withholding of business dealings with the concerned contractor, in case the performance is found unsatisfactory.

PROJECT	
PACKAGE	
CONTRACTOR	
PACKAGE AWARD DATE	
PACKAGE COMPLETION DATE	

FORMAT FOR ENGG & QA SCORE

(TO BE FILLED IN BY ENGG.)

S.No.	Parameters	Max Score (A)	Act % age w.r.t. sch (B)	Marks obtained (C) = (A)x(B)
(i)	%age of “ Approval ” category drgs/ docs submitted within submission schedule.	30		
(ii)	%age of “ Information ” category drgs/ docs submitted within submission schedule.	20		
(iii)	%age of drgs/docs approved within approval schedule (in Cat-I/IV)*	20		
(iv)	%age of drgs/docs approved within approval schedule (in Cat-II/IVR)*	20		
(v)	%age of Sub-vendor proposal for items identified in “DR” category & submitted within agreed schedule (i.e. 3 months prior to schedule date of ordering identified in L2)**	10		
	TOTAL	100		

* For (iii) & (iv) above - If all drawings/documents due for approval are approved in Cat-I/IV within approval schedule, then marks allocated against (iii) & (iv) above shall be clubbed for calculation purpose.

** In case no “DR” proposal is submitted and orders are placed on already approved vendors, then full marks shall be given for calculation purpose against item (v).

PROJECT	
PACKAGE	
CONTRACTOR	
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PACKAGE COMPLETION DATE	

FORMAT FOR FINANCE SCORE

(TO BE FILLED IN BY PP&M PRT COORDINATOR ON MONTHLY BASIS DURING PRT MEETING, BASED ON DETAILS TO BE FURNISHED BY SITE P&S)

S. no	Parameters	Max Score (A)	% Rating (B)	Marks Obtained (C) = (A) *(B)
(i)	Number of instances Employer has to issue Comfort letters to sub-vendors for getting supplies.	25		
(ii)	Number of instances vendor has requested for advance against BG from Employer (beyond contractual provision)	25		
(iii)	Number of instances of supply delay beyond 1 month after issuance of MDCC.	25		
(iv)	Number of instances of direct supply / diversion of materials / consumables by Employer.	25		
	TOTAL	100		

*Performance to be captured by PP&M PRT Coordinator on monthly basis during PRT Meeting, based on details to be furnished by site P&S.

*(No instances = 100%

Up to 1 instance = 50%

more than 1 instances = 0%).

PROJECT	
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CONTRACTOR	
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FORMAT FOR SUPPLY SCORE

(TO BE FILLED IN BY CONTRACTS)

S. no	Parameters	Max Score (A)	Actual w.r.t. schedule (B)	% L2	Marks Obtained (C) = (A) *(B)
(i)	Ordering of Bought out items as per approved L2 network*				
	Major Bought out items	20			
	Minor Bought out items	5			
	Number of instances of cancellation / changes of Bol orders (No instances = 100% Up to 1 instances = 50% more than 1 instances = 0%).	10			
(ii)	Supply of Main Equipment per approved L2 network	60			
(iii)	Supply of Mandatory spares as per approved L2 network	5			
	TOTAL	100			

*If Major & Minor Bought out items are not separately identified in L-2 network then both shall be clubbed into single line item with Max score of 25.

Note: Overall % of actual progress vis-à-vis L2 schedule in Col (B) shall be arrived in the following manner:

- (i) Let there be n type of Items/systems identified in L2/Quantified L2 schedule i.e. E1, E2, E3 En.
- (ii) Let % progress for each type of Item/system vis-à-vis L2 schedule be %E1, %E2, %E3.....%En.
- (iii) Overall % in Col (B) = (%E1+ %E2+ %E3.....+%En)/n

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FORMAT FOR CONSTRUCTION/INSTALLATION SCORE

(TO BE FILLED IN BY SITE)

S. no	Parameters	Max Score (A)	% of actual vis-à-vis L2 schedule (B)	Marks Obtained (C)=(A) *(B)
(i)	Physical progress i.e. Installation of equipment / item, Civil works (i.e. Excavation, RCC, Piling, etc), Structural Works (i.e. Structural Fabrication, Erection, etc) as per approved L2 network	95		
(ii)	Project Management Capability and resource Management by Vendor at site. (5 Negative marks per instance)			
	Number of instances of delay due to inadequate deployment of equipment and T&P, based on record maintained in hindrance register, monthly PRT MoM, contractor's MPR, etc.	(-)5		
	Number of instances of direct payment by Employer to Contractor's sub-vendors to expedite supplies / services / the progress of work at site affected due to strike / delay in payments to labourers.	(-)5		
(iii)	Submission of Monthly Report in specified formats.	5		
	TOTAL	100		

Details of Area-wise performance is mentioned below:

Sr No.	Activities	Scope	L2 Finish Date	Actual Completed till L2 Finish	%age Comp
1	Excavation				
2	RCC				
3	Structural / Equipment Erection				
				Avg Comp %	

Note: For Physical Progress, overall % of actual progress vis-à-vis quantified L2 schedule in Col (B) shall be arrived in the following manner (Unit of measurement shall be as per approved BBU for respective activities):

- (i) Let there be n category of works identified in L-2/Quantified L2 schedule i.e. W1, W2, W3 Wn.**
- (ii) Let % progress for each category of work vis-à-vis L2 schedule be %W1, %W2, %W3.....%Wn.**
- (iii) Overall %in Col (B) = (%W1+ %W2+ %W3.....+%Wn)/n**

Note:

- All incidences shall be relevant to the current performance evaluation cycle.
- In case of delay in front (including construction drawings for civil packages and other inputs, if any) release by Employer, measurement of delay in execution by the contractor shall be normalized proportionally.
- Contractor will have to submit monthly progress report capturing actual physical progress viv-a-vis L2 schedule and delay in hand over of front by Employer, if any. In case of front delay the same has to be jointly signed by Employer's engineer & Vendor.

PROJECT	
PACKAGE	
CONTRACTOR	
PACKAGE AWARD DATE	
PACKAGE COMPLETION DATE	

FORMAT FOR QUALITY SCORE

(TO BE FILLED IN BY SITE)

S. no	Parameters	Max Score (A)	% Rating (B)	Marks Obtained (C)=(A) *(B)
(i)	Availability of Testing facilities (Available as per contractual requirement – 100% Not available – 0%)	25		
(ii)	Preventing recurrence of defects/complaints (up to 5 cases – 100%, Up to 10 cases – 40%, more than 10 cases – 0%)	25		
(iii)	Proper Storage & Preservation of Equipment/Material (Nil violation – 100%, Up to 1 case of violation – 40%, more than 1 cases of violation – 0%)	25		
(iv)	Deployment of Qualified Quality Officers/Manpower as per Contract (% deployment w.r.t. contractual requirement)	25		
	TOTAL	100		

PROJECT	
PACKAGE	
CONTRACTOR	
PACKAGE AWARD DATE	
PACKAGE COMPLETION DATE	

FORMAT FOR SAFETY SCORE

(TO BE FILLED IN BY SITE)

S. no	Parameters	Max Score (A)	% Rating (B)	Marks Obtained (C)=(A) *(B)
(i)	Having safety policy and approved Safety Assurance Plan (available as per requirement – 100%, Not-available – 0%)	10		
(ii)	Violation of safety requirement as per Safety Assurance Plan. (0 violation = 100% Upto 3 violations = 50% more than 3 = 0%)	20		
(iii)	No. of incidence of Fatal accidents due to contractor's negligence (0 incidence = 100% 1 incidence = 50% more than 1 cases, or multiple fatalities in one instance = 0%)	50		
(iv)	No. of incidence of Non-Fatal accidents due to contractor's negligence (0 incidence = 100% Up to 5 incidence = 50% more than 5 = 0%)	10		
(v)	Deployment of Qualified Safety Officers as per contract (% deployment w.r.t. contractual requirement)	10		
	TOTAL	100		

PROJECT	
PACKAGE	
CONTRACTOR	
PACKAGE AWARD DATE	
PACKAGE COMPLETION DATE	

FORMAT FOR CLAIMS & DISPUTE SCORE

(TO BE FILLED IN BY SITE)

S. no	Parameters	Max Score (A)	% Rating (B)	Marks Obtained (C)=(A) *(B)
(i)	No. of cases where Contractor stopped work on account of non-admittance/non settlement of claims (No case = 100% Upto 3 cases = 50% more than 3 cases = 0%)	70		
(ii)	No. of arbitration/legal cases resorted to by the Contractor (No case – 100%, otherwise 0%)	30		
	TOTAL	100		

PROJECT	
PACKAGE	
CONTRACTOR	
PACKAGE AWARD DATE	
PACKAGE COMPLETION DATE	

Overall Performance Evaluation

S.No.	Parameters	Max Score (A)	Score Obtained (B)	Weightage (C)	Max Weighted Score (D) = (A)*(C)	Weighted Score obtained (E) = (B)*(C)
(i)	Engineering & QA	100		0.20	20	
(ii)	Finance	100		0.20	20	
(iii)	Supply	100		0.20	20	
(iv)	Construction/Installation	100		0.20	20	
(v)	Quality	100		0.05	05	
(vi)	Safety	100		0.10	10	
	Claims & Disputes	100		0.05	05	
	Total			1.00	100	

Note: In case of Civil Contracts, score of Engineering & QA and Supply shall be NIL and weightage of Construction/Installation shall be 0.60.

Performance Rating

Total Weighted Score obtained	Performance Grade
Upto 50	Unsatisfactory
>50 to 70	Satisfactory
>70 to 80	Good
>80	Excellent

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NTPC SAFETY RULES ADOPTED BY DVC

FOR CONSTRUCTION AND ERECTION OF POWER PLANTS

INTRODUCTION:

NTPC Limited is a Maharatna organization taking lead in realizing the power dreams of the Nation with a vision “To be one of the World’s largest and best power utilities, Powering India’s growth”. Safety is one of the prime concerns of NTPC and it always strives towards accident free construction, erection, commissioning, operation and maintenance of its power projects. In this process, NTPC has already formulated Safety policy and guidelines for smooth execution of all its project activities.

In order to strengthen the existing Safety Rules for Construction and Erection and thereby curbing the chances of accidents in Construction & Erection works at various projects of NTPC, the existing safety rules have been revised for strict implementation. These Safety Rules lay down the safety requirements for safe execution of project activities, responsibilities of the contracting agencies, and all concerned involved in Construction and Erection.

A. RESPONSIBILITIES OF CONTRACTORS FOR IMPLEMENTATION OF SAFETY RULES:

The Safety Rules for Construction & Erection as outlined hereunder, while setting out a broad parameter of safety norms, are not exhaustive. The contractor and his agencies are advised to refer to the following statutory provisions as amended from time to time for details and strict compliance therewith.

FOR GREENFIELD PROJECTS:

- (a) Building and Other Construction Workers (regulation of employment and conditions of service) Act, 1996 (briefly referred to as BOCW Act),
- (b) Building and other construction workers (regulation of employment and conditions of service) Central Rules, 1998 (briefly referred to as BOCW Rules) as adopted by the various State Governments,

FOR EXPANSION, MODIFICATION, ALTERATION AND, OR CONSTRUCTION ACTIVITY WITHIN AN EXISTING PLANT OPERATING AS PER APPROVED SITE PLAN UNDER THE FACTORIES ACT;

- (a) Factories Act, 1948,
- (b) Factories Rules, as adopted by the various State Governments
- (c) BOCW Act
- (d) BOCW Rules

The contractor is also required to ensure compliance with all the relevant Acts/Rules in addition to above.

It shall be incumbent on the contractor to ensure that the requirements of safety, statutory or otherwise specified, are fully met. Thus the onus of implementation of the norms so prescribed shall squarely rest with the contractor concerned or, on his behalf, his sub-contractor or any other agency deployed by him, indemnifying NTPC from all the liabilities that may arise out of any failure to comply with the above mentioned Acts/Rules or any contravention thereof by the contractor or any other sub-agency on his behalf.

Safety cannot be ensured solely through Rules and Regulations or Codes. It is the responsibility of the Contracting Agency to ensure that basic safety principles are incorporated in the planning stage of their mobilization, execution, installation of machines, equipment, storage, etc., and initiate and maintain *safety programs*. It is desirable to have a planned programme and secure adequate cooperation of senior management, EICs, sub-contracting agencies, supervisory personnel and workers involved to ensure the implementation of the provisions of these Rules in true spirit so as to achieve the ultimate goal of *accident prevention*.

It shall also be the responsibility of the contracting agency to provide amenities and safety requirements on each construction job in order to reduce or to eliminate hazards of construction activities and also to provide necessary *first aid* facilities as well as Ambulance van (in case of major agencies) for prompt transportation of injured persons to a physician or hospital.

It is also mandated that the authorized representative of NTPC, namely, the Engineer-in-charge, may, at his convenience, exercise such superintendence, supervision and, or control as may be deemed necessary, but this shall not absolve the contractor of his basic responsibility for strict compliance with the norms, standards and, or legal provisions as applicable under the Factories Act/Rules and the Building and other construction (regulation of employment and conditions of service) Act/Rules.

Section wise checklist of provisions of BOCW Act/Rules is given hereunder for ready reference of the contractor. (This list has been prepared in chronological order with primary importance to Section of Act and secondary importance to Rules)

S - Refers relevant Sections in BOCWA

R - Refers relevant Rules in BOCWR

Sl. No.	ITEMS	RELEVANT SECTIONS / RULES IN BOCWA AND BOCWR AND RBOCWR
1	Registration of establishment	S – 7, R – 23 to 27
2.	Display of registration certification at workplace	R – 26 (5)
3.	Hours of work	S – 28 R – 234 to 237
4.	Register of overtime	S – 28; S – 29 R – 241(1) Form XXII
5.	Weekly rest and payment at rest	R – 235
6.	Night shift	R – 236
7.	Maintenance of workers registers and records	S – 30 R – 238
8.	Notice of commencement and completion	S – 46 R – 239
9.	Register of persons employed as building workers	R – 240
10.	Muster roll and wages register	R – 241(1) (a); Form XVI and XVII
11.	Payment of wages	R – 248
12.	Display of notice of wages regarding	R – 249
13.	Register of damage or loss	R – 241(1)(a); Form XIX, XX, XXI
14.	Issue of wages book	R – 241(2)(a); Form XXIII
15.	Service certificate for each workers	R – 241(2)(b); Form XXIV
16.	Display an abstract of BOCWA and BOCWR	R – 241(5)
17.	Annual return	R – 242; Form XXV
18.	Drinking water	S – 32
19.	Latrines and Urinals	S – 33 R - 243
20.	Accommodation	S – 34
21.	Creches	S – 35
22.	First-aid boxes	S – 36 R – 231 and Schedule III
23.	Canteens	S – 37 R – 244
24.	Food stuff and other items served in the canteens	R – 245
25.	Supply of tea and snacks in work place	R – 246
26.	Food charges on no loss no profit basis	R - 247
27.	Delhi BOCW welfare Board Rules	R – 250 to 296
28.	Safety committee	S – 38 R – 208

29.	Safety officer	S – 38 R – 209 and Schedule VII
30.	Reporting of accidents and dangerous occurrences	S – 39,R – 210
31.	Procedure for inquiry in to the causes of accidents	R – 211
32.	Responsibility of employer	S - 44 R – 5
33.	Responsibility of Architects, Project engineer and Designers	R – 6
34.	Responsibility of workmen	R – 8
35.	Responsibility for payment of wages and compensation	S – 45
36.	Penalties and Procedures	S – 47; S – 55
37.	Excessive noise, vibration etc.	R – 34
38.	Fire Protection	R – 35
39.	Emergency action plan	R – 36
40.	Fencing of motors	R – 37
41.	Lifting of carrying of excessive weight	R – 38
42.	Health, Safety and Environmental Policy	R – 39
43.	Dangerous and Harmful Environment	R – 40
44.	Overhead protection	R – 41
45.	Slipping, Tripping, Cutting, Drowning and Falling Hazards	R – 42
46.	Dust, Gases, Fumes, etc.	R – 43
47.	Corrosive substance	R – 49
48.	Eye Protection	R – 45
49.	Head Protection and other protection apparel	R – 46; R – 54
50.	Electrical Hazards	R – 47
51.	Vehicular traffic	R – 48
52.	Stability of structure	R – 49
53.	Illumination	R – 50; R – 124
54.	Stacking of materials	R – 51
55.	Disposal of debris	R – 52
56.	Numbering and marking of floors	R – 53
57.	Lifting appliances and gears	R – 55 to 81
58.	Runways and Ramps	R – 82 to 85
59.	Working on or adjacent to water	R – 86 & 87

60.	Transport and earthmoving equipment's	R – 88 to 95
61.	Concrete work	R – 96 to 107
62.	Demolition	R – 108 to 118
63.	Excavation and Tunneling works	R – 119 to 168
64.	Ventilation	R – 153
65.	Construction, repair and maintenance of step roof	R – 169 to 171
66.	Ladders and Step ladders	R – 172 to 174
67.	Catch platform and hoardings, chutes, safety belts and nets	R – 175 to 180
68.	Structural frame and formworks	R – 181 to 185
69.	Stacking and unstacking	R – 186 & 187
70.	Scaffold	R – 188 to 205
71.	Cofferdams and Caissons	R – 206 to 211
72.	Explosives	R – 212 & 213
73.	Piling	R – 214 to 222
74.	Medical Examination for building and other construction worker, Crane operator an Transport vehicle drivers	R – 81; R – 223(a)(iii) and Schedule
75.	Medical examination for occupational health hazards	R – 233(a)(iv)
76.	Charging of workers for Medical Examination	R – 223(b)
77.	Occupational health centres and Medical officers	R – 225 and Schedule X & XI
78.	Ambulance van & room	R – 226 & 227 and Schedule IV & V
79.	Stretchers	R – 228
80.	Occupational health service for building workers	R – 229
81.	Medical examination for occupational health hazards	R – 223(a)(iv)
82.	Emergency care services and emergency treatment	R – 232
83.	Panel of experts and agencies	Central Rule 250
84.	Power of inspectors	Central rule 251

B. RESPONSIBILITIES AND DUTIES OF WORKERS

- (a) It shall be the responsibility of the worker to comply with the requirements of safety as laid down for him and the group of workers to which he belongs and fully cooperate in the discharge of the responsibility that has been assigned to the contractor.
- (b) If he discovers any defects in the lifting appliance, lifting gear, lifting device or those concerning any transport equipment or other construction equipment or tools as well as the physical work conditions, he will report such defects promptly to his employer or NTPC Engineer or other person in authority;
- (c) No building worker shall, unless duly authorized or in case of absolute necessity, remove or interfere with any fencing, guards, gangways, gear, ladder, hatch covering, life saving appliances, lighting or other things whatsoever required and provided for safety and health. If any of the aforesaid things is removed, the persons engaged in the work shall restore such thing at the end of the period during which its removal was necessary;
- (d) Every worker shall use only means of access provided in accordance with the approved norms and no person shall authorize or order another to use such means of access or method other than those approved;
- (e) Workers shall use such means of access and egress for going to and exiting from the workplace as provided.

SECTION - I

SAFETY MANAGEMENT

1.0 SAFETY MANUAL AND SAFETY POLICY:

- 1.1** The Safety policy of the contracting agency should reflect the commitment of the concerned agency towards safety and health of the workers specified for the particular site.
- 1.2** The Contractor shall have Safety Plan detailing the safety norms evolved through Safety Policy and Job Safety Analysis (JSA) or Hazard Identification & Risk Assessment (HIRA) of all package activities and constitute a Safety management program. Contracts shall also ensure POWRA (point of work risk assessment) before start of any activity.
- 1.3** The safety management programme in the form of Safety Manual shall give details of provisions proposed by the agency w.r.t. Job Safety Analysis (JSA) or Hazard Identification and Risk Assessment (HIRA) to ensure safety of the employees and elimination of health hazards. The Safety Manual including safety policy duly signed by the head/senior executive of the agency shall be submitted to the concerned Engineer-Incharge(EIC), NTPC before start of their project activities at site.
- 1.4** Each contracting agency shall have facilities for conducting the above safety management programme, commensurate with magnitude of the work under contract.

2.0 APPOINTMENT OF SAFETY OFFICER/SAFETY SUPERVISOR:

- 2.1** Each contracting Agency shall provide a sufficient number of qualified, suitable and experienced persons to manage all safety related matter on Site relating to the works. Irrespective of manpower employed by the agency whether temporary, casual, probationer, regular or permanent or on contract, Agency shall deploy a qualified Safety Officer/executive, responsible for carrying out the safety management programme before start of the work.
- 2.2** The safety officer shall create an organization, commensurate with the project activities, consisting of other staff as required for suitable deployment.
- 2.3** The schedule of requirement of safety personnel is given below.

No. of Workers	No. of Safety Supervisors	No. of Safety Officers
Up to 100	1	1
101 to 250	2	1
251 to 500	4	1
501 to 1000	6	2
1000 to 2000	6+ One additional supervisor up to every additional 250 workers	3
2000-3000	10+ One additional supervisor up to every additional 250 workers	4
3000-4000	14+ One additional supervisor up to every additional 250 workers	5
Above 4000	18 + One additional supervisor up to every additional 250 workers	5 + one safety officer up to addition 1000 workers

2.4 The qualification and experience of the safety personnel should meet the following criteria.

- a) Safety Supervisor: (i) Possesses recognized degree in any branch of Engineering. OR
(ii) Diploma in any branch of Engineering with at least one year construction experience.
- b) Safety Officer/Safety Executive: Qualification as given under BOCW Act/rules and minimum experience of three years.

2.5 In case contractor fails to employ the required safety professionals, the department may at the cost and risk of the contractor deploy additional/required safety professionals. The cost incurred towards this shall be deducted from contractor's bill at following the rates or actual whichever is higher.

- 1. Safety Engineer Rs. 1500/day.
- 2. Safety Supervisor Rs. 1000/day.

3.0 MEETING FOR SAFETY AFTER AWARD OF THE CONTRACT:

Representatives of contracting agency along with safety Officer/executive shall meet the concerned EIC of the particular activity prior to start of construction activities for the purpose of discussing safety standards and requirements applicable to the work under contract. The person representing the agency should be a responsible person for all their site activities.

4.0 PERSONAL PROTECTIVE EQUIPMENT:

4.1 The contracting agency should ensure sufficient inventory of personal protective equipment (PPEs) prior to initial mobilization as specified in the Bidding Documents. After identifying the need of the required PPEs for various activities performed at the site, an additional inventory of approx. 20% of required PPEs should be maintain during the execution of the work. A PPE plan shall be prepared which gives fair idea regarding issue of PPEs to various personnel as per the following 'PPE Selection Matrix'.

4.2 Mandatory PPEs: Wearing of Safety Helmet, Safety Shoes and reflective jacket is mandatory for all work at site and it should be ensured that all employees and project visiting personnel shall invariably wear safety helmet, safety shoes & reflective jacket.

PPE Matrix (apart from mandatory PPEs, i.e., Safety Helmet & Safety Shoes)

Activity	Type of Protection						Remarks, if any
	Hand	Eye	Ear	Body	Respiratory	Others	
Gas Welding & Cutting	LG	WG	-	LA	*SCBA/ OLBA	-	* for confined space
Electric Arc Welding	LG	HMWS	-	LA	*SCBA/ OLBA	-	* for confined space

Rigging	CG	SG	-				--
Working at Height	-	SG	-	DLFBH	-	*FAS	* for vertical columns
Grinding & Chipping	CG	FS / SG	-	LA	-	-	--
Working in High Noise	-	-	EP / EM	-	-	-	--
Handling of Cement Concrete	RG	SG	-	-	DM	-	
Blasting	CG	SG	EP*	-	-	-	* at noise area
Excavation	CG	SG	-	-	DM	-	*Gum boot in place of Safety shoe for foot
Chemical Handling	PVCG	CSG	-	PVCA	-	-	*Full body rubber suit with hood
Electrical and C&I	ERG*	SG	-	-	-	-	*For high voltages
Sand/shot blasting	CG	-	EP/ EM	CA	SAMH	-	

ABBREVIATIONS: FS: Face Shield, CSG: Chemical splash goggles, HMWS: Helmet mounted welder's shield, GB: gum boot, DLFBH: Double lanyard full body harness, SG: Safety goggles, DM: Dust mask, SAMH L Supplied air mask/hood, EP/EM: Ear plug/Ear Muff, CG: Cotton hand gloves, LG: Leather hand gloves, LA: Leather apron, RG: Rubber gloves, PVCG: PVC Gloves, PVCA: PVC Apron, SCBA: Self-contained breathing apparatus, WG: Welding goggles, ERG: Electrical Rubber Gloves. OLBA : Online breathing apparatus

4.3 The above-mentioned PPEs should be made available with contractor at site and issued to the concerned workers on the day of employment. All PPEs shall comply with ISI standards with valid test certificates.

4.4 At least two breathing apparatus sets (complying requirement as per IS: 10245) shall be provided at each site where excavation/tunneling works and Welding/ Cutting operations in confined areas are being carried out, to rescue the victims under exposure to harmful gases/vapors, if any.

5.0 SAFETY COMMITTEE:

- 5.1** *Safety committee* shall be formed within each contracting agency comprising of worker representatives with equal no. of management representatives as per the provisions of BOCW Act/rules. This committee in each agency shall meet at least once in every month. The safety officer of the concerned agency shall coordinate these meetings. NTPC Safety officer shall be special invitee for Safety Committee meetings. The safety committee functioning shall be in line with the provisions of BOCW Act/Rules.
- 5.2** Apart from the above, each agency shall organize safety meetings every day before start of day's work to educate & motivate the workers about the necessity of safety. Case study of accident/ incident can be shared in these meetings.
- 5.3** The contractor shall also regularly organize safety meetings for all job supervisors/foremen.
- 5.4** Weekly meeting with agencies' Safety Officers to be organized by safety department of NTPC and minutes to be recorded, circulated and compliance status to be checked on regular basis.

6.0 SAFETY MESSAGE PROPAGATION:

- 6.1** Contracting agencies shall arrange for display of safety hoardings depicting suitable safety cartoons/messages/ cautionary notices at appropriate places of project site to remind the workers to perform their duties safely. Minimum one safety message board/hoarding of appropriate size for every 10 workers to be provided and maintained by the concerned agency.
- 6.2** Apart from safety hoardings, each agency should maintain a safety bulletin board at all their work locations. Such safety bulletin boards should depict the activities being planned for the day, good practices, permit details etc.
- 6.3** Safety suggestion boxes shall be kept at each contractor's office at site for obtaining safety suggestions from the workers. Best suggestions should be implemented and may be rewarded suitably to encourage the workers for safety.

7. COMPETENCY OF EMPLOYEES:

- 7.1** Throughout the course of the contract, persons employed by agency shall be physically fit, qualified/experienced to perform their assigned duties/ jobs.
- 7.2** Employees shall not, knowingly be permitted to work in a manner that their ability or alertness is so impaired because of fatigue, illness or any other reason, that it may expose them and or others to injury.
- 7.3** No worker, vehicle operator shall be less than 18 years of age. And the vehicle operator shall have a valid license as per requirements of Motor Vehicle Act.
- 7.4** Contractor shall comply with all applicable state/central laws and codes related to employment of operators for Hoist, Shovel, Crane, Tractor, Bull-dozer, any other howling heavy equipment/vehicle.

8.0 SAFETY INDUCTION AND TRAINING :

- 8.1** Each worker deployed by the agency shall be given 2-days induction training which shall include the medical examination and instructions related to particular job, fire fighting, first-aid and reporting of accidents. All employees shall be given safety training as per BOCW Act/Rules.
- 8.2** The contracting agency shall also impart job specific skill based safety training to all its employees (Minimum one day) on various related safety topics using internal/external safety professionals/consultants as per the matrix given below. Record of such trainings and attendance particulars shall be maintained in a register for ready reference to statutory authorities/engineer-in charge.

TRAINING MATRIX:

Name of topic	Executives	Super visors	Skilled Workmen	Other Workers
Safety Induction	Y	Y	Y	Y
Accident_ Causes, factors, cost	Y	Y	Y	-
Industrial hazards & Accident Prevention	Y	Y	Y	-
Investigating, reporting, records	Y	Y	-	-
Personal Protective Equipment	-	Y	Y	Y
Construction Safety & Role of Supervisory personnel	-	Y	-	-
Permit to Work (PTW)	-	Y	Y	y
Statutory Provisions (BOCW Act/Rules, Factories Act 1948 etc.)	Y	Y	y	y
Material handling	-	y	Y	Y
Emergency Management	Y	Y	Y	-
Electrical Safety	-	Y	Y	-
Fire safety	Y	Y	Y	Y
First Aid & CPR (cardio pulmonary resuscitation)	-	Y	Y	Y (Selected)
Safety in Welding & Cutting	-	-	Y	-
Safety Audit	Y	Y	-	-
Safety in Lifting Tools & Tackles	-	Y	Y	y
Safety in Working at height	-	Y	Y	Y
Safety in Confined space work	-	Y	Y	Y
Defensive Driving	-	Y*	Y*	Y*

*for construction vehicle operators, helpers & crane operators

Y=Yes

9.0 ID PASS

- 9.1** CLIMS (Contract Labor Information Management System) will be the criterion for entering or gate pass system if implemented at site.
- 9.2** The contractor shall ensure that all personnel working at site having a photo Identity card before they are engaged for any work and properly mentioned details like validity, Category/designation and work area etc. This ID card should be issued only after ensuring their screening test, medical fitness and safety induction training. Id card gate pass shall be indicated with 3 nos. of offence marks. With each offence the gate pass of concerned workmen/ supervisor will be punched giving on the spot indication of persons indulging in unsafe actions.
- 9.3** Drinking of Alcoholic beverages is strictly prohibited. Employees under the influence of any intoxicants, even to the slightest degree, shall not be permitted to remain at work. Each contractor should maintain 'breath analyzer' to determine the intoxicated workers at site.

10 SAFETY AUDIT

- 10.1** Internal Safety Audit once in every six months by the contracting agency and external safety audit as once in a year by third party shall be conducted, with prior intimation to EIC and NTPC Safety Deptt. The external auditing agency should be reputed safety institution or a certified Safety Auditor under any statutory legislation. The audit report along with time bound action plan should be submitted to Engineer-in-charge and NTPC Safety Dept.
- 10.2** Apart from above, Electrical Safety Audit shall be conducted quarterly by a team comprising of Electrical engineer, Safety representative of contractor and NTPC Electrical Erection representative covering the following and submit the report to EIC.
- i) Electrical incidents investigation findings and remedial measures implemented.
 - ii) Adequacy of power supply requirements
 - iii) Power distribution system in place
 - iv) Updated electrical single line diagram including the IP44 DBs arrangement.
 - v) Electrical protection devices – ELCBs, O/L protections etc.
 - vi) Earth or ground connection and earth pit maintenance details
 - vii) Education and training of electrical personnel undertaken
 - viii) Any other point appropriate to the site conditions.

11. SAFETY BUDGET

Every contracting agency should clearly estimate and allocate a separate budget head for safety requirements every year and make the safety activity plan for the year and submit to NTPC EIC & Head of Safety. Budget allocations should be practically adequate to the site safety requirements and the details shall be intimated to the concerned EIC and safety deptt. before start of the work under the contract and subsequently, every year by 15th of April. Engineer-in Charge in consultation with Head of Safety shall review and monitor the effective utilization of allocated budget for safety related activities by the Contractor.

12. REPORTING AND INVESTIGATION OF ACCIDENTS AND DANGEROUS OCCURRENCES:

12.1 Reporting of accidents: Notice of any accident (the prescribed format is annexed to the manual) to a worker at the building or construction site that

- (a) Causes loss of life; or
- (b) Disables a worker from working for a period of **48 hours** or more immediately following the accident;

Shall forthwith be sent by Telegram, Telephone, Fax, Email or similar other means including special Messenger within **four hours** in case of **fatal accidents** and **72 hours** in case of **other accidents**, besides the Engineer-in-charge, to:

- I. The Regional Labour Commissioner (Central);
- II. The Board with which the worker involved was registered as a beneficiary;
- III. Director General of Building and other construction (regulation of employment and conditions of service) Act/Rules; and
- IV. The next of kin or other relative of the worker involved in the accident;

12.2 Further, notice of accident shall be sent in respect of an accident which

- (a) Causes loss of life; or
- (b) Disables the injured worker from work for more than 10 days to
 - (1) The Officer-in-charge of the nearest Police Station;
 - (2) The District Magistrate or, if the District Magistrate by order so desires, to
 - (3) The Sub-Divisional Magistrate;

12.3 Where any accident causing **disablement that subsequently results in death**, notice thereof in writing of such death, shall be sent the Authorities mentioned above within **72 hours** of such death.

12.4 In case of an accident causing minor injury, first-aid shall be administered and that resulting in disability of **48 hours or more**, the injured worker shall be given first-aid and immediately transferred to a Hospital or other place for medical treatment.

12.5 All near-miss accidents shall be reported to NTPC Engineer In-charge and Safety Officer as per prescribed format.

12.6 Reporting of dangerous occurrences: The following classes of dangerous occurrences shall be reported to the Inspector having jurisdiction, whether or not any disablement or death caused to the worker, namely:

- (a) Collapse or failure of lifting appliances, or hoist, or conveyors, or similar equipment for handling of building or construction material or breakage or failure of rope, chain or loose gears; or overturning of cranes used in construction work;
- (b) Falling of objects from height;
- (c) Collapse or subsidence of soil, any wall, floor, gallery, roof or any other part of any structure, platform, staging, scaffolding or means of access including formwork;
- (d) Contract work, excavation, collapse of transmission;
- (e) Explosion of receiver or vessel used for storage at a pressure than atmospheric pressure, of any gases or any liquid or solid used as building material;

- (f) Fire and explosion causing damage to any place on construction site where building workers are employed;
- (g) Spillage or leakage of any hazardous substance and damage to their container;
- (h) Collapse, capsizing, toppling or collision of transport equipment;
- (i) Leakage or release of harmful toxic gases at the construction site;
- (j) In case of failure of a lifting appliance, loose gear, hoist or building and other construction work, machinery and transport equipment at a construction site, such appliances, gear, hoist, machinery or equipment and the site of such occurrence shall, as far as practicable, be kept undisturbed until inspected by the Authorities;

12.7 Every notice given for fatal accidents shall be followed by a written report to the concerned Statutory Authorities and the Engineer In-charge in the specified Form annexed as Schedule, under acknowledgement.

12.8 Incident / injury statistics shall be maintained by all agencies cause wise.

12.9 Investigation of accidents and dangerous occurrences

Besides reporting, it shall be the responsibility of the contractor to constitute a team (members as per the gravity of the incident) of responsible person to thoroughly investigate all incidents involving near-miss accidents, lost-time and reportable accidents and dangerous occurrences with a view to finding out the causative factor, taking remedial measures and fixing responsibility, and make a copy of the investigation report along with action-plan, specifying a definite time-frame for implementation of the findings, available to the Engineer in-charge forthwith.

13. MEDICAL AND FIRST AID AMENITIES:

13.1 It is the responsibility of each contracting agency to ensure the availability of suitable arrangements at their work site for rendering prompt and efficient First aid to injured persons.

13.2 Arrange one trained and certified first aid for every twenty workers in each shift.

13.3 Ambulance with proper equipment for prompt transportation of the injured persons to a physician or a hospital shall be provided before start of the work in cases where 500 or more than 500 workers are employed. For smaller contracts, where less than 500 workers are employed, Contractor shall have a tie-up with suitable Agency for providing Ambulance with proper equipment for prompt transportation of the injured persons to a physician or a hospital in case of an Accident / Emergency. Further, Contractor shall submit a proof of the same to EIC/Safety Officer of NTPC.

13.4 Deploy one full time construction medical officer (qualification as per Schedule XI of BOCW Central Rules -1998) for cases where 500 or more workers are employed (upto one thousand workers) and one additional construction medical officer for additional one thousand workers or part thereof. For smaller contracts, where less than 500 workers are employed, Contractor shall have a tie-up with suitable Hospital / Nursing home in the vicinity of the

Project/Site where work is being executed, for providing adequate medical treatment by qualified medical officers and nursing staff, as and when required. Further, Contractor shall submit a proof of the same to EIC/Safety Officer of NTPC.

Notwithstanding anything stated above, Contractor/Agency shall strictly comply with the requirements of relevant BOCW Act/ BOCW Rules/ Factory Act/Factory Rules/ any other statutory Act/Rules/Law with regards to providing suitable medical facilities to the workers.

In case contractor fails to employ the required construction medical officer alongwith Additional staff, corresponding payment for the same shall not be made and/or necessary action as per provisions of the Bidding documents shall be taken by NTPC.

- 13.5** Additional staff including one nurse, one dresser-cum compounder, one sweeper-cum-ward boy with each construction medical officer for full working hours
- 13.6** The Telephone nos. of Medical officer, Hospital(s) or ambulance shall also be conspicuously displayed at each work site.
- 13.7** First-aid kits as approved by medical officer shall be provided at accessible points in the ratio of at least one kit for every 50 employees.
- 13.8 Health Management:** The site manager shall implement health examinations for the working personnel on a regular basis.

Types of health examination	Target	Frequency
General health examination	All workers	Annual
Occupational health examination (Audiometric, PFT, Vision etc.)	Worker engaging in noise, dust, vibration, harmful light generating work	Annual
Occupational health examination (Vision)	Personnel involved in operation of Cranes, heavy vehicles	Annual
Occupational health examination (Vertigo/Height pass)	Workers engaged at Height Works	At the time of induction training and every year

14. TESTING & EXAMINATION OF LIFTING, TOOLS, TACKLES, PRESSURE VESSELS AND OTHER EQUIPMENT:

- 14.1** All the lifting equipment, tools, tackles, pressure vessels etc. shall be tested & examined as per BOCW or Factories Act and rules made there under.

- 14.2** The records & certificates of such testing & examination shall be maintained and readily available for reference to statutory authorities/engineer-in-charge.
- 14.3** Proper color coding system should be maintained and marking should be done accordingly on all lifting tackles.
- 14.4** Regular testing of ELCBs and RCCBs by competent electrician must be ensured by agencies and record should be maintained.

15. EMERGENCY MANAGEMENT PLAN

- 15.1** The contractor shall ensure that an Emergency Management Plan is prepared to deal with emergencies arising out of:
 - a. Fire and explosion;
 - b. Collapse of lifting appliances and transport equipment;
 - c. Collapse of building, sheds or structure etc.;
 - d. Gas leakage or spillage of dangerous goods or chemicals;
 - e. Drowning of workers, sinking vessels, and
 - f. Landslides getting workers buried; floods, storms and other natural calamities.
- 15.2** While arrangements shall be made for emergency medical treatment and evacuation of the victim in the event of an accident or dangerous incident occurring, the chain of command and the responsible persons of the contractor with their telephone numbers and addresses for quick communication shall be adequately publicized and conspicuously displayed in the workplace.
- 15.3** It is also required that there is a tie-up with the hospitals and fire stations located in the neighborhood for attending to the casualties promptly and emergency vehicle kept on standby duty during the working hours for the purpose.
- 15.4** It shall be the responsibility of the contractor to keep the Local Law & Order Authorities informed and seek urgent help, as the case may be, so as to mitigate the consequences of an emergency. Prompt communication to NTPC, telephonically initially and followed by a written report, shall be made by the contractor.

16. ENFORCEMENT OF SAFETY CODE, SAFETY RULES & REGULATIONS:

The Engineer-In charge shall ensure that the contractor is exercising at all times, reasonable and proper precautions for the safety of people at works and complying with the provisions of current safety rules and laws according to safety code and relevant statutes of state/central governments. In case of negligence or default, the agency shall be penalized suitably as per penal provisions of NTPC Safety Rules.

17. WORK PERMIT SYSTEM

- 17.1** The Contractor shall implement Work Permit system, which is a formal written system used to control certain types of work that are potentially hazardous. A work permit is a document, which specifies the work to be done, and the precautions to be taken. Work Permits form an essential part of safe systems of work for many construction activities. They start the work

only after safe procedures have been defined and clearance taken from respective NTPC EICs. Permits to Work are usually required in high-risk areas as identified by the Risk Assessments.

17.2 Examples of high-risk activities include but are not limited to:

- i) Entry into confined spaces
- ii) Cutting & welding
- iii) Working at Height along with checklist iv) Working on electrical equipment
- v) Heavy lifting operations
- vi) Removal of grating/ Handrail / floor opening
- vii) Material Shifting

The copies of recommended formats for reference is given in annexure-IV.

17.3 The permit-to-work system should be fully documented, laying down:

- i) How the system works
- ii) The jobs it is to be used for;
- iii) The responsibilities and training of those involved; and
- iv) How to check its operation;

17.4 A Work Permit authorization form shall be completed with the maximum duration period not exceeding 12 hours.

17.5 A copy of each Permit to Work (PTW) shall be displayed near to work are (on PTW Display board) in close proximity to the actual works location to which it applies.

18. ACCESS TO AND FROM THE WORKPLACE

18.1 Safe, clean, well lit, unencumbered access and egress to and from work areas shall be maintained at all times in normal operating conditions.

18.2 The number and location of accesses and egresses from and to the workplace shall be adapted to the number of people likely to be present at any time, and therefore to evacuate from the workplace in case of emergency.

18.3 If access and egress to work areas are restricted due to operational conditions (e.g. access restricted due to pressure testing, etc.), alternative access and egress ways must be implemented, so far as is reasonably practicable. If this is not reasonably practicable, all concerned organizations and persons must be informed of the access restrictions, and work scheduling must be adapted in consequence.

18.4 Temporary access to height or into ground openings shall be of purpose made material such as scaffolds, stair cases/towers and ramps, which incorporate guardrails .

19. INTERFERENCE WITH MOVING VEHICLES AND PEDESTRIANS

- 19.1** The circulation of vehicles and pedestrians must be segregated by establishing restricted areas, one way routes where possible, pedestrian crossing zones and designated parking areas.
- 19.2** The appropriate measures must be implemented in order to prevent collision between pedestrians and vehicles at pedestrian crossings. This may include, but shall not be limited to:
 - Mirrors;
 - Lighting;
 - Speed bumps before the crossing point.
- 19.3** Vehicle and pedestrian ways shall be physically separated with Hard-barriers, so far as is reasonably practicable, and be indicated with signs.



- 19.4** When it is not reasonably practical to implement a physical segregation, pedestrians must maintain safety distance of at least 2 meters from moving/operating vehicles at all times.
- 19.5** Traffic rules must be made visible through signage and traffic stops, consistent with those used on public
- 19.6** Roads as per road safety requirement.
- 19.7** All pedestrians on Project sites must wear high-visibility garments.
- 19.8** Pedestrians (including banksmen) must wear high-visibility garments in all areas where trucks and other vehicles (forklifts, cranes, etc.) maneuver. These areas must be clearly signaled / marked (floor painting, Hard-barriers, signs, etc.).Additional points:
- 19.9** Competent banksmen must be used for operations involving reversing or maneuvering where space or view is restricted.
- 19.10** Drivers must only operate vehicles they are competent to drive and must follow the established traffic routes and comply with all site rules.
- 19.11** The maximum driving speed on site is 15 km per hour.
- 19.12** Drivers and passengers must not get on or off moving vehicles.
- 19.13** When driving a forklift, forks must be lowered, the mast tilted back.
- 19.14** Smoking, eating, drinking, using a mobile phone or using earbuds or headphones when driving a vehicle is strictly prohibited.
- 19.15** When the vehicle is not in use, it must be ensured that:
 - The engine is stopped and prevented from unauthorized use (e.g.: starter key removed), brake applied (and with wheels chocked for heavy vehicles);
 - All raised parts are lowered to the ground or put in a safe position (cranes);
 - It does not obstruct emergency exits, other routes, fire equipment or electricity panels.

20. HOUSEKEEPING

The contractor shall ensure that their work area is kept clean, tidy and free from debris generated by their activities. All debris/scrap should be stored in separate bins. The work areas must be cleaned on a daily basis and a full cleaning session of each area shall be conducted on a weekly basis. All equipment, materials and vehicles shall be stored in an orderly manner. Access to emergency equipment, exits, telephones, safety showers, eye wash stations, fire extinguishers, pull boxes, fire hoses, etc. shall not be blocked or otherwise disturbed, restricted or delayed.

21. STACKING AND STORAGE PRACTICE

Contractor Agency shall ensure stacked material is bonded on a stable and level footing capable of carrying the mass of the stack. Adequate clearances shall be provided between the sides of the stack and top to facilitate unimpeded access to service equipment like overhead wiring, cranes, forklifts and firefighting equipment, and hoses. Circular items shall be sufficiently choked with wedges not with odd bits of materials. Free-standing stacks of gunny bags and sacks such as Cement bags shall be stacked to prescribe safe stacking heights with layers formed for stable bonding, preventing slippage causing accidents. Stacking against walls shall not be permissible.

Contractor shall maintain the premises and surrounding areas in clean and clear manner with safe access and egress. There shall be sufficient and adequate storage racks, shelving, bins and pallets and material handling equipment to stack his construction materials such as Pipes, Structural and his construction enabling materials. Unwanted materials shall be promptly moved away for efficient material movement.

Any temporary store shed will be built in conformity with fire safety requirements. The stores must be provided with adequate lighting arrangement (Flame proof / intrinsically safe depending upon the Zone category) and must be equipped with sufficient fire extinguishing arrangement. "No Smoking" and other relevant signage must be displayed conspicuously at strategic locations and safety precautions must be strictly enforced.

All material should be kept at least 150mm above from the ground by providing wooden packing below. Maximum height of material stacking should not be greater than 3 meter. All loose material must be kept in wooden box or in sharp edge protected drum and material identification details to be displayed. Materials inside store room should be kept on scaffold rack.

Gas cylinder storage area must be 30m away from the hot work zone and separate storage facility must be available for empty and full cylinder with proper shed. Storage area must be design in a way that 6 meter distance between LPG/DA and oxygen maintained

22. CONFINED SPACES

All Confined Spaces belonging to Subcontractor shall be identified and clearly signed posted as a confined space forbidden to unauthorized Personnel at every entrance. A method for preventing entry must be established and maintained for all Confined Spaces. Physical prevention system (such as locks) is preferred.

Before commencing work in a Confined Space, the Subcontractor must obtain a Permit to Work from the relevant authority.

The following requirements shall be met at any time:

- Only competent and trained workers can participate to work in confined spaces (as a minimum as per local Law). A Confined Space Entry Log (or equivalent) must be used to identify the person inside the Confined Space at any time;
- Air Analysis tests must be carried out to determine if the Confined Space is oxygen deficient and/or contains flammable substances, toxic agents, carbon monoxide and/or harmful physical agents. The air shall be analyzed before starting work, during work and after work. Adequate ventilation must be provided;
- Working in the confined space without a watcher is strictly forbidden. An adequate means of communication is required and shall enable easy and clear communication:
 - Between those inside the space,
 - Between those inside the space and those outside,
 - To summon help in case of emergency;
 - Adequate emergency provisions must be in place. In particular, necessary rescue equipment must be ready, pre inspected and available. The arrangements need to be suitable and sufficient for the rescue of persons in the event of an emergency.

23. FIRE PROTECTION AND PREVENTION

Routine hot works should be described in the contractor Risk Control Plan .Non-routine hot works are submitted to daily hot works permits given by the relevant authority.

Full and unrestricted access to emergency exits, fire-fighting equipment, fire control and emergency vehicles shall be maintained at all times. The Subcontractor shall provide, install and maintain their own temporary fire protection against hazards they introduce to the Site (work areas, storage areas, and temporary facilities under their responsibilities).

Fire extinguishers shall be inspected at least annually by a certified person and visually inspected monthly and documented by the Contractor.

24. ELECTRICAL SAFETY

Personal authorization must be issued by Contractor Management (or formally designed delegates) likely to perform or supervise electrical works.

Without such an authorization validated by EIC, no Contractor's employee shall undertake electrical works.

No live work on high voltage or medium voltage is allowed. All high voltage and medium voltage electrical works must be performed on isolated equipment and only after verification of absence of voltage with suitable equipment. Low voltage and very low voltage live work is only allowed for measurement tests and checks of equipment. The below measures will be taken:

- Work practices must protect against direct or indirect body contact by means of tools or materials and be suitable for work conditions and the exposed voltage level
- A Lockout and Tagout procedure must be applied prior to commencing any electrical work. Prior to commencing works on isolated equipment, a verification of absence of voltage with suitable safety test equipment must be performed.
- Energized panels will remain locked with a specific key or tool whenever they are unattended and tagged with the signs and warnings indicating the presence of danger. If not reasonably practicable, a restricted area delimited with physical barriers and supported by warning signs must be implemented around the opened equipment.
- Only qualified electrical Contractor Personnel may enter substations and/or transformer vaults and only after being specifically authorized by NTPC EIC.
- All joints (Both terminal and intermediate) in cable should be made using lugs and joint area should be crimped using crimping tools.
- All temporary connection should be provided through 30mA ELCB/RCCB using 3 core double insulated cable and only 3 pin industrial plug top will be used for connection.
- Zero energy verification needs to be ensured before any electrical operation using only VAV before working on a live circuit which has been isolated
- Only industrial type DB to be used for connection and weather protection shed needs to be provided for every DB and shed height should not be less than man height.
- Double earthing protection must be provided for every electrical equipment and earthing value should be less than 1 Ohm
- Deployment of trained, experienced & licensed electrician as well as licensed electrical supervisor must be ensured at site as per Rule-45 of the Indian Electricity Rules, 1956 ;
- EIC May perform screening/ competency test for all contractor electrical professions i.e. electrical engineers and helpers. Selection/ rejection of the personnel who appear for the screening is sole discretion of EIC
- Electrical helper who will be engaged in helping the electrician/ engineer must have minimum ITI certificate to be eligible for working with him
- All PPE's used while being involved in electrical work must be as per IS Standards available for electrical work

25. COMPRESSED GAS CYLINDERS

Gas cylinders shall be securely stored and transported, and identified and used in line with the safety Requirements as per Gas Cylinder Rules -2106.

Hose lines shall be adequately protected, inspected and tested for leaks in line with the safety Requirements. Flash back arrestor /NRV must be used at both ends of the hoses and all hose should be free from damage and fixed properly preferably using crimping clamps. Leakage test must be done before every use by soap solution and physical inspection of hose must be carried out regularly. Only trolley attached with wheel will be used for cylinder transportation in which cylinders must be kept secured with chain. Only Industrial type regulator fitted with two stage double dial pressure gauge is allowed to be used.

26. LIFTING OPERATIONS

The Contractor shall prepare a lifting plan, checked and submit for authorization by contractor's competent authorized persons prior to any lifting operation and formally communicated to all persons undertaking the work.

All persons preparing, issuing lifting plans and all persons involved in lifting operations must be subject to formal competence checks by the contractor to ensure necessary training, experience and qualification prior to commencing work. The Subcontractor must ensure that their nominated Lifting Leader has appropriate qualifications.

Contractor lifting plans include:

The lifting methodology, step by step

The risk analysis of the operation including consideration for weather conditions and work environments (e.g.: proximity of hazards and obstructions to the load, consideration for overturning, load integrity) where appropriate and consideration for simultaneous operations and the measures taken to avoid conflicting tasks in the lifting area

The identification of the designated lifting area, the fall zone and the control measures to prevent access such as barriers, signs, etc.

The description of the type, weight, size, shape and center of gravity of the load and the method used for slinging, attaching and detaching the load with the availability of approved lifting points on load when necessary

The list of the certified and inspected equipment and lifting accessories to be used

The composition of the team required to perform the task (crane driver, rigger, etc.) with the needed qualifications and description of their roles and responsibilities including the intended communication method

Any Heavy equipment (crane, winch machine, etc.) manufactured less than 15 years from the current year shall be only allowed to be used at our project Site's. Pre-safety Inspection of the equipment by safety deptt. shall be done before mobilizing the equipment at our project site.

The contractor must ensure that a competent operational leader is formally appointed to supervise each lifting operation. All lifting plans must clearly define the specific roles and responsibilities for each person involved (e.g.: crane drivers, lifting coordinators and riggers) and must be checked and issued prior to lifting operation. Clear communication channels must be formally established and maintained between everyone involved in a lift with only authorized person giving instruction to the operator.

Special permission needs to be taken from NTPC EIC for tandem lifting and for any non-routine lifting operations must strictly adhere to the guidelines described in corresponding Standard / Procedures / Directive.

No employee of the contractor shall be positioned under a suspended load or between a suspended load and fixed objects.

All lifting equipment and accessories must have valid manufacturers certificates or thorough examination records and be uniquely identified, marked with the safe working load, listed in a register and subject to formal regular inspection as per EHS requirements and shall have valid certificates from a competent authority. Inspection before use by the operator is mandatory. All lifting hooks must have latch. All cranes shall be fitted with Automatic Safe Load Indicator (ASLI) and Anemo Meter.

The contractor shall operate and maintain cranes and hoisting equipment in accordance with manufacturers' specifications and limitations and the safety Requirements. All defective, non-inspected or unidentified (safe working load / identification number) lifting equipment or accessories must be either removed from site or physically prevented from use.

27. LOCKOUT TAGOUT (“LOTO”)

Prior to performing work on Machines or Equipment, the Subcontractor shall ensure that all energy sources are isolated and verify the absence of residual energy (e.g.: by using specific voltage detecting device for electricity).

At any time, the contractor shall follow the Site-specific LOTO and Permit to Work rules. The contractor must ensure that all of their affected Subcontractor Personnel receive the necessary training. Lockout/ Tagout must be implemented before servicing and maintenance is performed on Machines and Equipment, which could unexpectedly start-up, become energized, or release stored energy exposing persons to a risk of injury, unless the works undertaken are performed using alternative measures that provide effective protection.

Absence of residual energy must be verified using the suitable equipment or process adapted to the machine and the kind of energy to be checked before start of work. *The contractor must procure suitable VAV instrument for verification of absence of voltage before implementing LOTO all by themselves.*

When the contractor is in charge of LOTO, each authorized person must be issued with an individual lock with a unique key. The contractor shall secure areas where energy sources have been de energized, so as to prevent the access of unauthorized personnel and erect suitable signs. All affected Personnel shall be notified.

Once an item of electrical equipment has been energized, an item of mechanical plant and/or System has been erected and released for Commissioning, no work will be allowed on such item of Equipment or System unless a valid Permit to Work (PTW) has been obtained from the relevant authority.

28. MONTHLY SAFETY REPORT

Agency has to submit the monthly safety activity report in the form of Lead-Lag indicator to NTPC Safety Deptt. Sample format attached as annexure –IV.

- 29.** In case the Contractor doesn't adhere to any of the provisions of the NTPC Safety Rules for Construction and Erection of Power Plants, corresponding payment for the provisions not adhered, shall not be made and/or necessary action as per provisions of the Bidding documents shall be taken by NTPC.

SECTION-II

1. Safety at workplace and equipment

1.0 GENERAL PROVISIONS:

1.1. Housekeeping:

- a. The contractor shall be primarily responsible for maintaining Good housekeeping and safety standards in the workplace;
- b. Loose materials that are not required for use shall not be placed or left behind so dangerously as to obstruct workplaces or passageways;
- c. All projecting nails shall be removed or bent to prevent injury;
- d. Equipment, tools and small objects shall not be left lying unattended or unsecured from where they could fall or cause a person to trip;
- e. Scrap, waste or rubbish shall not be allowed to accumulate in the site as these combustibles can create serious fire hazards and affect safe working;
- f. Workplaces and passageways that become slippery owing to spillage of oil or other causes shall be cleaned up or strewn with sand, ash or the like;
- g. Portable equipment shall be returned after use to their designated storage place.

1.2. Means of access and egress shall consist of

- a. Adequate and safe means of access and egress shall be provided in all workplaces;
- b. The means of access and egress shall be maintained in a safe condition;

1.3 Lighting and ventilation

- a. All practical measures shall be taken to prevent smoke, fumes etc. from obscuring any workplace or equipment at which any worker is engaged;
- b. Adequate and suitable artificial lighting shall be provided where natural lighting is not sufficient as per IS 3646 (Part II). The artificial lighting so provided shall not cause any incidental any danger, including that of producing glare or disturbing shadows;
- c. To prevent danger to health from air contamination by dust generated during grinding, cleaning, spraying or manipulation of materials as also to provide protection against dangerous gases, fumes, vapours, mist, etc. effective arrangements shall be made for ventilation;
- d. Workers shall be provided with suitable respiratory protective equipment, if it is not technically possible to have uncontaminated air. To this end, a study by a competent person shall be made to decide on the due protection. Sufficient illumination at all times for maintaining safe working conditions shall be provided where building workers are required to work or pass, and for passageways, stairways and landings such illuminations shall not be less than 0.5 foot candles at the floor level;
- e. Where natural lighting is not adequate to prevent danger, adequate and suitable lighting shall be provided as per IS: 3646 – Part II;
- f. Artificial lighting shall not cause any danger due to a brightness greater than 10 foot candles per square inch, except where the angle of inclination from the eye to the source or the part pf the fitting as the case may be exceeds 20° , including that of producing glare or disturbing shadows;
- g. Where necessary to prevent danger to health from air contamination by dust from the grinding, cleaning, spraying, or manipulating of materials or objects, arrangements shall be made to limit the concentration of the pollutants by thorough ventilation, and dust generated due to movement of earthmoving machinery and other construction equipment, by spray of water in the area from time to time;
- h. Adequate ventilation by the circulation of fresh air shall be maintained in such places where the concentration of pollutants is likely to affect the health of the workers;

- i. Special care shall be taken to ventilate the workplace where gas cutting, welding or other operations involving generation of dangerous fumes, vapours, mists, gases etc is likely;
- j. Where it is technically not possible to eliminate dust or noxious or harmful fumes or gases sufficiently to prevent injury to the health of the workers, the contractor shall provide suitable respiratory equipment like dust mask or gas/fume mask or breathing apparatus or other suitable respiratory equipment.

1.4. Dangerous and harmful environment:

- a. When an internal combustion engine exhausts into confined space or excavation or tunnel or any other workplace where neither natural ventilation nor artificial ventilation system is adequate to keep the carbon monoxide content of the atmosphere below fifty parts per million, adequate and suitable measures shall be taken at such workplace in order to avoid exposure of building workers to health hazards;
- b. No building worker shall be allowed to enter any confined space or tank or trench or excavation wherein there is given off any dust fumes or other impurities of such nature and to such extent as is likely to be injurious or offensive to the building worker or in which explosives, poisonous, noxious or gaseous material or other harmful articles have been carried or stored or in which dry ice has been used as a refrigerant, or which has been fumigated or in which there is a possibility of oxygen deficiency, unless all practical steps have been taken to remove such dust, fumes or other impurities and dangers which may be present and to prevent any further ingress thereof, from such workplace or tank or trench or excavation;
- c. No worker shall be allowed to enter any such space unless a responsible person has certified it safe and fit for the entry of such building workers.

1.5. Fumes/gases due to Welding and gas-cutting operations: When welding or cutting operations are carried out in a confined space:

- a. Adequate ventilation, by means of exhaust fans or forced draught, as the condition may require, shall be constantly provided; otherwise enough quantity of air shall be circulated by means of air compressors to dilute the contaminant within permissible limits;
- b. Workers shall take necessary precautions to prevent unburned combustible gas or oxygen from escaping inside a tank or vessel or other confined space;
- c. Welding or cutting operations on any container that has held explosives or where inflammable gases may have been generated, shall be undertaken after the container has been thoroughly cleaned by steam or other effective means; and
- d. Gas-test shall be carried out ensure that the confined space is completely free from combustible gases and vapours.

1.6. Dust, gases, fumes

- a. Concentration of dust, gases or fumes shall be prevented by providing suitable means to control their concentration within the permissible limit so that they may not cause injury or create health hazard to a building worker;

- b. For protection against such hazardous substances, besides efficient and effective means of control, personal protective equipment like dust masks, breathing apparatus, other respiratory appliances, goggles, as the case may be, shall be provided.

1.7. Excessive noise:

- a. Adequate measures shall be taken against the harmful effects of an excessive noise;
- b. Use of earplugs/muffs and anti-vibration gloves shall be ensured to protect the workers from the impact of exposure to such dangers;
- c. The noise level in no case shall exceed as prescribed in the concerned Rules and exposure in excess of 115 dBA over the period of a quarter of an hour cannot be permitted:

1.8. Corrosive substances:

- a. All corrosive substances, including alkalis and acids, shall be stored and used by a person dealing with such substances at a building or other construction work in such a manner that it does not endanger the building worker and suitable protective equipment shall be provided by the employer to a building worker during handling or use of such substances at a building or other construction work and in case of spillage of such substances on the building worker, immediate remedial measures shall be taken;
- b. While protection of the body could be ensured by use of corrosion resistant apparel/overalls, suitable goggles, gloves, apron, gum boots etc. shall be made available to all concerned personnel;
- c. To deal with an accidental spillage of a corrosive substance on the body of a worker, the facility of eyewash fountain or water shower, as the case may be, shall be installed, within the easy reach of the workplace.

1.9. Eye protection:

- a. Suitable personal protective equipment for the protection of eyes shall be provided and used by the building worker engaged in operations like welding, cutting, chipping, grinding or similar operations which may cause hazard to his eyes;
- b. Goggles or face shield or welding screen with suitable shade of glass/filters etc shall be provided for the protection of the eyes.

1.10. Overhead protection:

- a. It shall be ensured that at the building or other construction site, overhead protection is erected along the periphery of every building under construction that shall be of fifteen meters or more in height when completed;
- b. Overhead protection shall not be less than two meters wide and shall be erected at a height not more than five meters above the base of the building and the outer edge of such overhead protection shall be one hundred fifty millimeters higher than the inner edge thereof or shall be erected at an angle of not more than twenty degrees to its horizontal sloping into the building;

- c. It shall be also ensured that at the building and other construction work that any area exposed to risk of falling material, articles or objects is roped or cordoned off or otherwise suitably guarded from inadvertent entry of persons other than building workers at work in such area.

1.11. Lifting and carrying of excessive weight:

- a. No building worker lifts by hand or carries overhead or over his back or shoulders any materials, articles, tools or appliances exceeding in weight the maximum limits as set out in the following table unless aided by any other building worker or a mechanical device;
- b. No worker aided by other workers, lift by hand or carry overhead or over their back or shoulders any materials, articles, tools or other appliances exceeding in weight the sum total of the maximum limits as prescribed in the concerned Rules, unless aided by a mechanical devices:

1.12. Protections against fall of persons –

- a. All scaffolds/working platforms at height of two metres or more shall be fenced;
- b. All guard-rails for the fencing of floor openings, gangways, elevated workplaces shall be made of sound material, good construction and possess adequate strength and be between 1 m and 1.5 m above platform level, consist of two rails (two ropes or chains may be used if they are sufficiently taut) and supporting stanchions;
- c. Intermediate rails, ropes or chains shall be midway between the top and lower of edges of the top rail;
- d. Sufficient number of stanchions or standard poles or uprights shall be maintained to ensure the required stability and resistance;
- e. Guard-rails shall be free from sharp edges and be maintained in good repair;
- f. Floor openings through which persons could fall, shall be guarded by covering or fencing;
- g. If the means of protection is removed to allow the passage of persons or goods or other purpose, the same shall be replaced as soon as possible, while making temporary arrangements for reasonable degree of safety in the meanwhile;
- h. Covers for floor opening shall be safe to walk on and if vehicles operate thereon it shall be safe for the same. This will require the contractor to have prior assessment of expected loads;
- i. Cover for floor opening shall be secured by hinges, grooves, stops or other effective means against sliding, falling down or lifting out or any other inadvertent displacement;
- j. Covers for any openings shall not constitute any hindrance to traffic and, as far as practicable, be flush with the floor;
- k. If covers constitute as grids, the bars shall be spread not more than 5 cm apart;
- l. Elevated workplaces at more than 2 m above the floor or ground shall be protected on all open sides by guardrails. It is commonly observed that fragile barricade tapes are used as a substitute of a strong and dependable fencing. This practice is prohibited. The barricade tapes can be used as markers/route guide only;
- m. Elevated workplaces shall be provided with safe means of access and egress such as stairs, ramps or ladders according to suitability;
- n. Persons employed at elevated workplaces or other situations at more than 2m from which they may fall, shall be protected by means of adequate safety nets, or platforms, or be secured by

safety belts with the lanyard properly anchored above the head level of the user. All possible effort shall be made to have strong and dependable mechanical arrangement.

1.13. Protection against fall of objects and materials:

- a. Materials and objects such as scaffolding materials, waste materials or tools shall not be thrown up or down from heights, as they are liable to cause injury;
- b. If materials and other objects cannot be safely lowered from heights, adequate precautions such as the provision of fencing, lookout men or barriers shall be provided to protect any person from injury.

1.14. Protection against entry of unauthorized persons:

- a. Construction zones in the site and built up areas alongside main traffic routes shall be barricaded;
- b. Unauthorized persons shall not be allowed access to construction sites and visitors shall be provided with the required protective equipment and it be ensured that they use them effectively.

1.15. Head protection and other protection apparel:

Every building worker who is required to –

- a. Pass through or working within the areas where there is hazard of his being struck by falling objects or materials, shall be provided with safety helmets of the type approved and tested in accordance with the national standards;
- b. Work in water or in wet concrete or in other similar work, shall be provided with suitable waterproof;
- c. Work in rain or in similar wet condition, shall be provided with waterproof coat with hat;
- d. Workers using or handling of alkalis, acid or other similar corrosive substances shall be provided with appropriate protective equipment in accordance with the approved standards;
- e. Every building worker engaged in handling sharp objects or materials at a building or other construction work, which may cause hand injury, shall be provided with suitable hand gloves in accordance with the approved standards.

1.16. Stability of structures:

- a. No wall, chimney or other structure or part of a structure shall be left unsupported in such condition that it may fall, collapse or weaken due to wind pressure, vibration or due to any other reason. Entry of persons into such locations where tall structures are being built shall be regulated without a let up.

1.17. Safety of Structures and equipment and other safety concerns

- a. Safety of structures like scaffoldings, platforms, gangways/walkways, towers, stairs, ladders, ramps, safety in excavation, formwork, falsework, demolition work, storage, handling and use of explosives, inflammable substances and hazardous materials, gas cutting and welding, use of electricity etc.; and equipment viz. construction machinery, crushers and batching plant, boiler and other pressure vessels, transport and material handling equipment, lifting appliances, vehicles etc., shall be operated and maintained as per approved norms and –
 - i. They shall be made of sound material and of good construction, free from patent defects, provided with adequate safe guards, properly maintained, periodically inspected and strong enough to withstand safely the loads and stresses to which they may be subjected;
 - ii. They shall carry enough factor of safety bearing in mind that the possibility of their abuse, which otherwise shall be prevented by constant and adequate supervision, cannot be ruled out altogether;
 - iii. It is incumbent on the contractor to ensure that only competent and authorized persons operate the equipment or attend to electrical and mechanical systems and repair of faults or breakdowns etc.
- b. Working in the confined space may involve certain serious hazards. Strict adherence to the conditions of Permit-to-work issued for the purpose is required;
- c. Control of energy sources shall be ensured through Log-out/Tag-out practices.

1.18. Slipping, tripping, cutting, drowning and falling hazards:

- a. The contractor shall keep all passageways, platforms and other places free from accumulations of dust, debris or similar material and from other obstructions that may cause tripping;
- b. Any sharp projections or protruding nails or similar projections which may cause any cutting hazard to a building workers shall be removed or otherwise made safe by taking suitable measures;
- c. No contractor shall allow any building worker at construction work to use the passageway, or a scaffold, platform or any other elevated working surface which is in slippery and dangerous condition and shall ensure that water, grease, oil or other similar substances which may cause the surface slippery, be removed or sanded/saw-dusted or covered with suitable material to make it safe from slipping hazard;
- d. Wherever building workers are exposed to the hazard of falling into water, they shall be provided with rescuing arrangement from such hazard and if it is considered necessary, well equipped boat or launch manned with trained personnel shall be provided by the contractor at the site of such work;
- e. Every open side or opening into or through which a building worker, vehicle or lifting appliance or other equipments may fall at a building or other construction work shall be covered or guarded suitably to prevent such fall except where free access is necessary by reasons of their nature of the work;
- f. Wherever building workers are exposed to the hazards of falling from height while employed on such work they shall be provided by the employer with adequate equipment or means for

saving them from such hazards, Such equipments or means shall be in accordance with the standards as laid down;

- g. Whenever there is a possibility of falling of any martial, equipment or building worker at a construction site relating to a building or other construction work, adequate and suitable safety net shall be provided in accordance with the above stipulation;

2.0 SAFETY IN MATERIAL HANDLING AND WASTE DISPOSAL

2.1. GENERAL PROVISIONS:

- a. All building materials stored in tiers shall be stacked, racked, blocked, interlocked or otherwise secured safely to prevent sliding, falling or collapse and in an orderly manner to avoid obstruction of any passageway at the place of work. Piles of materials shall be stored or stacked in such a manner as to ensure their stability;
- b. Maximum safe load limits of floors within buildings and structures in kg/cm² shall be conspicuously posted in all storage areas, except for floor or slab on gradient. Maximum safe load shall not be exceeded. Material or equipment shall not be stored upon any floor or platform in such quantity as to exceed its safe carrying capacity;
- c. Ailes and passageways shall be kept clear to provide for the free and safe movement of material handling equipment or persons. Such areas shall be kept in good repair;
- d. When a difference in road or working levels exist, means such as ramps, blocking or grading shall be used to ensure the safe movement of vehicles between two levels;
- e. Material stored inside buildings under construction shall not be placed within 2 m of any hoist way or inside floor openings nor within 3.2 m of exterior wall which does not extend above the top of material stored;
- f. Persons employed required to work on stored material in silos, hoppers and similar storage areas shall be equipped with lifelines and safety belts;
- g. Non-compatible materials shall be segregated in storage;
- h. Bagged materials shall be stacked by stepping back the layers and cross-keeping the bags at least every 10 bags high;
- i. Materials shall not be stored on scaffolds or runways in excess of supplies needed for immediate operations;
- j. Bricks stacks shall not be more than 2.2 m in height. When a loose brick stack reaches a height of 1.3 m it shall be tapered back 5 cm in every foot of height above the 1.25 m level;
- k. When masonry blocks are stacked higher than 2 m, the stack shall be tapered back on half block per tier above the 2 m level;
- l. Material or equipment shall not be stored or placed so close to any edge of a floor or platform as to endanger the safety of persons below or working in the vicinity. Where stacking, unshackling, stowing or unstaring of construction material or article, or handling in connection therewith cannot be safely carried out unaided, reasonable measures to guard against accident or dangerous occurrences shall be taken by shoring or otherwise to prevent any danger likely to be caused by such handling;
- m. Stacking of material or article shall be made on firm foundation not liable to settle and such material or article and shall not overload the floor on which such stacking is made;

- n. The material or articles shall not be stacked against partition or walls of a warehouse or stores unless it is known that such partition or the wall is of sufficient strength to withstand the pressure of such materials or articles;
- o. The materials or articles shall not be stacked to such a height and in such a manner as would render the pile of such stack unstable and cause hazards to the building workers or the public in general;
- p. Where the building workers are on stack exceeding one point five meters in height, safe means of access to the stack shall be provided;
- q. All stacking or unstacking operations shall be performed under the supervision of a responsible person for such stacking or unstacking;
- r. The stacking of construction materials or articles shall not be made near the site of excavation, shaft, pit or any other such opening;
- s. Stacks that may lean heavily or become unstable or collapse are barricaded shall be avoided;
- t. Structural steel, poles, pipe, bar stock and other cylindrical materials, unless racked, shall be stacked and blocked so as to prevent sliding, spreading or tilting.

2.2. LUMBER:

- a. Used lumber shall have all nails withdrawn before stacking;
- b. Lumber shall be stacked on level and solidly supported sills;
- c. Lumber piles shall not exceed 6 m in height provided that lumber is handled manually, shall not be stacked more than 5 m height;
- d. Lumber shall be so stacked as to be stable and self-supporting.

2.3. STACKING OF CEMENT AND BAGS CONTAINING OTHER MATERIALS:

- a. The cement or other material in bags shall be stacked in a header and stature-wise in rows alternately in not more than 10 numbers and there will be circulation of space of at least 600 mm in between two such rows;
- b. While removing bags from the stack pile the stability of such stack pile shall be ensured;
- c. Bags containing cement or lime shall be stored on a firm ground;
- d. The materials like bricks, tiles or blocks shall also be stored on a firm ground;
- e. Reinforcing steel shall be stored according to its shape, size and length and stack of reinforcing steel kept as low as possible;
- f. No pipe shall be stored on rack or in stack where such pipe is likely to fall by rolling;
- g. The angle of repose shall be maintained where loose materials are stacked;
- h. When dust laden material is to be stored or handled, measures shall be taken to suppress the dust produced by such storing or handling and suitable personal protective equipment supplied to and used by the building workers working for such storing or handling.

2.4. DISPOSAL OF DEBRIS AND WASTE MATERIAL:

- a. It shall be ensured that debris is
 - i. Handled and disposed of by a method, which does not cause danger to the safety of a person and not allowed to accumulate so as to constitute a hazard;
 - ii. Kept sufficiently moist to bring down the dust under control;
 - iii. Not thrown inside or outside from any height of such building or other construction work;
- b. Brought down by suitable means/chutes provided for the purpose and on completion of work, leftover building material, article or other substance or debris shall be disposed off as soon as possible to avoid any hazard to any traffic or person;
- c. Whenever materials are dropped more than 6 m to any point lying outside the exterior walls of the building an enclosed chute of wood, or equivalent material shall be used;
- d. When debris is dropped through holes in the floor without the use of chutes, the area where the material is dropped shall be completely enclosed with barricades not less than 1.1 m high and not less than 1.9 m back from the edge of the opening above. Signs warning of the hazard of falling material shall be posted at each level;
- e. All scrap lumber, waste material and rubbish shall be removed from the immediate work area as the work progresses;
- f. Disposal of waste material or debris as per the guideline issued by CPCB in compliance of Rule 10 sub-rule 1(a) of C & D Waste Management Rules, 2016).
- g. All bio-degradable material shall be disposed off in the pit for making compost. Pellets can also be made from bio-degradable material
- h. All solvent wastes, oil rags and flammable liquids shall be kept in fire resistant covered containers until removed from the work site.

2.5. HANDLING GAS CYLINDERS:

- a. Gas cylinders shall not be lifted on bare slings. For lifting the cylinders, cage of suitable size shall be used and all cylinders shall be horizontally positioned in it. Such cage shall have fencing in such a way that there is no possibility of fall of cylinders from this cage.

2.6. RIGGING EQUIPMENT FOR MATERIAL HANDLING:

- a. Rigging equipment for material handling shall be inspected prior to use in each shift as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service;
- b. Rigging equipment shall not be loaded in excess of its recommended safe working load, as prescribed in the Indian standards;
- c. Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to persons engaged in the area;

- d. Special custom designed grabs, hooks, clamps, or other lifting accessories, for such units as modular panels, prefabricated structures and similar materials, shall be marked to indicate the safe working loads shall be proof tested prior to use 125% of their rated load;
- e. Welded alloy steel chain slings shall have permanently affixed-durable identification standing size, grade, rated capacity and manufacturer.

2.7. FENCING OF MOTORS ETC

- a. All motors, cogwheels, chains and friction gearings, flywheels, shafting and the other dangerous and moving parts of machinery (whether or not driven by mechanical power) and steam pipes shall be securely fenced and the fencing of dangerous parts of machinery not removed while such machinery is in motion or in use;
- b. No part of any machinery which is in motion and which is not securely fenced, shall be examined, lubricated, adjusted or repaired except by a person skilled and trained for such examination, lubrication, adjustment or repairs and machine parts cleaned only when such machine is stopped;
- c. When a machine is stopped for servicing or repairs, adequate measures shall be taken to ensure that such machine does not restart inadvertently and not only tag-out sign is required; it is also essential that an active system of isolating the power be applied.

2.8. PROTECTION AGAINST LIGHTNING

- a. Where necessary, installations shall be protected against lightning, provided further that;
- b. No bare conductors or bare current-carrying parts of equipment be permitted to be installed unless adequate precautions are taken to prevent direct or indirect contact;
- c. Only flame-proof equipment and conductors shall be installed at places where explosives or inflammable substances are stored, handled or used or where explosive atmosphere exists;
- d. Persons competent and authorized only shall attend to electrical breakdowns and other operational faults and give or restore power to an equipment and such persons shall be easily identifiable by their dress or special helmet worn;
- e. It will constitute a standard practice to switch off portable tools while shifting from one place to another or while leaving them behind unattended;
- f. The contractor shall ensure that a system is in place to always keep tools well maintained.

2.9. VEHICULAR TRAFFIC

- a. Whenever any building or other construction work is being carried on, or is located in close proximity to a road or any other place where any vehicular traffic may cause danger to building workers, it shall be ensured that such building or other construction work is barricaded and suitable warning signs and lights displayed or erected to prevent such danger and if necessary, a request in writing made to the concerned authorities to control such traffic;

- b. All vehicles used at construction site shall comply with the requirements of the Motor Vehicles Act, 1988 (59 of 1988) and the Rules made hereunder;
- c. The driver of a vehicle of any class or description operating at a construction site shall hold a valid driving license under the Motor Vehicles Act. 1988 (59 of 1988).

2.10. USE OF SAFETY BELT OR OTHER FALL ARREST SYSTEMS:

Wherever any work at a height of 3 m or more is carried out, use of a suitable fall arrest system is mandatory if the workplace has already not been provided with an otherwise reliable means of protection for preventing the fall of persons from that height, provided further that:

- a. Safety belt, lanyard, life lines and devices for the attachment of such life lines shall conform to the approved standards;
- b. Every building worker shall be supplied with safety belt and safety life lines for his protection and such building worker shall use such belts and life lines during the performance of his work;
- c. All building workers using safety belt and safety life lines shall have the knowledge of safe use and maintenance of such belts and life lines and shall be supplied with necessary instructions for its use;
- d. The responsible person for supervising the use of safety belts and safety lifelines shall inspect and ensure that such safety belts and lifelines are fit for use before taking them into use.

2.11. SAFETY NET AND ITS USE

- a. Every safety net shall be of adequate strength, made of sound material and suitable for use and conform to the approved standards;
- b. The responsible person for maintenance of safety nets and their use shall ensure safe fixing of such safety nets and provide such safety nets with suitable and sufficient anchorage so that the purposes for which such safety net is intended for use is served;
- c. Use of multi-layer safety net to be ensured to avoid fall of material/objects.

2.12. STORAGE OF SAFETY BELTS AND NETS, ETC:

- a. Proper arrangement shall be made for the safe storage of safety belts, safety lifelines and safety nets when they are not in use and are protected against mechanical damage, damages from chemicals and damages from biological agents.

2.13. SAFETY HELMETS AND SAFETY FOOTWEAR

- a. The Engineer in-charge may declare whole or part of a site as the hardhat area and in such an eventuality it shall be the responsibility of the contractor to provide safety helmet of the approved quality to all personnel engaged in construction and erection work, including the visitors to the site;
- b. Accordingly, wherever safety footwear is required for the safety of the personnel, the contractor shall provide the same of the approved type free of charge.

3.0 WELDING AND GAS CUTTING OPERATIONS

3.1 GAS WELDING:

3.1.1 GENERAL PROVISIONS:

- a. All welders shall be provided with fire resistant protective clothing and equipment, such as fire resistant gauntlets and aprons, helmets and goggles with suitable filter lenses and its usage shall be ensured;
- b. The welders shall not be allowed to wear clothing that is not free from grease, oil and other flammable material;
- c. Adequate precautions shall be taken to protect persons working or passing near welding operations from dangerous sparks and radiation;
- d. When welding or cutting is being done on materials containing toxic or harmful substances or liable to produce toxic or harmful fumes, adequate precautions shall be taken to protect workers from the fumes, either by
 - i) Exhaust ventilation, or
 - ii) Respiratory protective equipment;
 - iii) Arrangement shall be made so that welding sparks do not fall down on the persons working below or material, which are combustible in nature and may be damaged with such sparks.
- e. The oxygen pressure for welding shall always be high enough to prevent acetylene flowing back into the oxygen cylinder;
- f. Acetylene shall not be used for welding at a pressure exceeding 1 atmosphere gauge;
- g. Adequate precautions shall be taken to prevent:
 - i) Fire being started by sparks,
 - ii) Slag or hot metal; and
 - iii) Damage to fibre ropes from heat, sparks, slag or hot metal;
- h. Precautions shall be taken to prevent flammable vapours and substances from entering the working area;

3.2. WELDING AT PLACES WITH FIRE RISKS:

- a. Unless adequate precautions are taken, no welding or cutting operations shall be allowed near the place where combustible materials are stored, or near materials or plant where explosive or flammable dusts, gases or vapours are likely to be present or given off. If hot work permit system exists at the site, the same shall be followed;
- b. Combustible materials and structures that cannot be removed from the vicinity of welding operations shall be shielded by asbestos or protected by other suitable means.

3.3. WELDING IN CONFINED SPACE:

When welding or cutting operations are being carried out in a confined space;

- a. Adequate ventilation, by means of exhaust fans or forced draught as the condition may require, shall be constantly provided; otherwise enough quantity of air shall be blown in by means of compressors to dilute the pollutants;

- b. No blow pipe shall be left unattended inside a tank or vessel or other confined space during meal break or other interruption of the work;
- c. The worker shall take all necessary precautions to prevent unburned combustible gas or oxygen from escaping inside a tank or vessel or other confined space; and
- d. When necessary to prevent danger, an attendant shall watch the welders from outside.

3.4. WELDING ON CONTAINERS FOR EXPLOSIVE OR FLAMMABLE SUBSTANCES:

Welding or cutting operations on containers in which they are explosives or flammable substances shall not be allowed;

- i) Welding or cutting operations on any container that has held explosive or where flammable gases may have been generated, shall only be undertaken,
- ii) After the container has been thoroughly cleansed by steam or other effective means; and
- iii) Found by air tests to be completely free from combustible gases and vapours; or
- iv) After the combustible gas in the container has been completely replaced by an inert gas or by water;
- v) If an inert gas is used as laid down in clause 4.2.3, after the vessel has been filled with gas, the gas shall continue to flow slowly into it thorough out the welding or cutting operations;
- vi) Before starting any welding operations on, or otherwise applying heat to, closed or jacketed containers or other hollow parts, such containers or parts shall be adequately vented in suitable manner.

3.5. GAS CYLINDERS

- a. Gas cylinders shall be inspected, stored, handled and transported in conformity with the requirements of Gas Cylinders Rules, 1981;
- b. When in use, cylinders shall be held in upright positions by straps, collars or chains;
- c. Devices referred to in clause 6.2 shall be such that the cylinders can be rapidly removed in an emergency;
- d. Welders shall not temper with or attempt to repair safety devices and valves on gas cylinders;
- e. When acetylene cylinders are coupled, flash back arrestor shall be inserted between the cylinder and the coupler block, or between the coupler block and the regulator;
- f. Only acetylene cylinders or approximately equal pressure shall be coupled;
- g. No gas shall be taken from a cylinder unless a pressure reducing regulator has been attached to the valve;
- h. Only the right pressure reducing regulator shall be used for the gas in the cylinder;
- i. Cylinder valves shall be kept free from gases, grease, oil, dusts and dirt;
- j. Leaky cylinders charged with acetylene or liquefied fuel gas shall be taken into the open air at a safe distance from any open flame or sparks.

3.6 HOSE

- a. Only hose especially designed for welding and cutting operations shall be used to connect an oxy-acetylene torch to gas outlet;
- b. Hose lines for oxygen and for oxy-acetylene shall be of different colours and preferably of different size;
- c. Hose connections shall be sufficiently light to withstand without leakage a pressure twice the maximum delivery pressure of the pressure regulators in the system;

- d. Care shall be taken that hose does not become kinked or tangled, stepped on or run-over or otherwise damaged;
- e. Any length of hose in which a flashback has burned, shall be discarded;
- f. No hose with more than one gas passage shall be used;
- g. Only soapy water shall be used for testing hose for leaks.

3.7. TROCHES

- a. When torches are being changed, the gases shall be shut off at the pressure reducing regulators and not by crimping hose;
- b. Torches shall be lit with friction lighters or other safe source but not with matches.
- c. Electric welding equipment:
- d. Welding machines shall be controlled by a switch mounted on or near the machine framework that, when opened, immediately cuts off the power from all conductors supplying the machine;
- e. Welding circuit shall be so designed as to prevent the transmission of high potential from the source of supply to the welding electrodes;
- f. The maximum open circuit voltage shall be in accordance with Indian Standards;
- g. Electrode conductors or cables shall not be excessive in length and shall not be longer than necessary to perform the work;
- h. Return conductors shall be taken directly to work and securely connected mechanically and electrically to it or to the work bench, floor etc. and to an adjacent metallic object;
- i. Cable shall be supported so as not to create dangerous obstruction;
- j. Motors, generators, rectifiers and transformers in arc welding or cutting machines, and all current carrying parts, shall be protected against accidental contact with uninsulated live parts;
- k. Ventilating slots in transformer enclosures shall be so designed that no live part is accessible through any slot;
- l. Frames of arc welding machines shall be effectively earthed;
- m. In hand-operated arc welding machines, cables and cable connectors used in arc welding circuits shall be effectively insulated on the supply side;
- n. The outer surface electrode holders of hand-operated arc welding machines, including the jaw so far as practicable, shall be effectively insulated;
- o. Electrode holders of hand-operated arc-welding machines shall, if practicable, be provided with discs or shields to protect the operator's hands from the heat of the arcs;
- p. Only heavy-duty cable with unbroken insulation shall be used;
- q. Circuit connections shall be waterproof;
- r. When lengths of cable have to be joined, only insulated connectors shall be used on the earth line and the electrode holder line;
- s. Connections to welding terminals shall be made at distribution boxes, socket outlets, etc. by bolted joints;
- t. Welding terminals shall be adequately protected against accidental contact by enclosures, covers or other effective means;
- u. Electrode holder shall
 - i. Have adequate current capacity;
 - ii. Be adequately insulated to prevent shock, short-circuiting or flashovers.

3.8. OPERATIONS

- a. Arc welding and cutting operations that are carried on at places where persons other than the welders are working or passing shall be enclosed by means of suitable stationary or mobile screens;
- b. Walls and screens of both permanent and temporary protective enclosures shall be provided to absorb harmful rays from the welding equipment and prevent reflection, and if necessary, be painted or otherwise treated for the purpose;
- c. When arc welding is done in damp confined spaces;
 - i) Electrode holders shall be completely insulated; and
 - ii) The welding machines shall be outside the confined space;
- d. Welders shall take adequate precautions
 - i) To prevent any part of their body from completing an electric circuit
 - ii) To prevent contact between any part of the body and the exposed part of the electrode, or electrode when in contact with metal; and
 - iii) To prevent wet or damaged clothing, gloves and boots from touching any live part;
- e. Welding circuits shall be switched off when not in use;
- f. Electrodes shall only be inserted in the holder with insulating means such as insulating gloves;
- g. Electrode and return leads shall be adequately protected against damage;
- h. Live parts of electrode holders shall be inaccessible when they are not in use;
- i. Electric arc-welding equipment shall not be left unattended with current switched on.

4.0 SAFETY IN THE USE OF ELECTRICITY

4.1. GENERAL PROVISIONS

- a. Before commencement of any building or other construction work, adequate measures shall be taken to prevent any worker from coming into physical contact with any electrical equipment or apparatus, machines or live electrical circuit which may cause electrical hazard during the course of his employment and suitable warning signs shall be displayed and maintained at conspicuous places in Hindi and in local language understood by the majority of the building workers;
- b. In workplaces where the exact location of underground electric power line is not known, the building workers using jack hammers, crow bars or other hand tools which may come in contact with a live electrical line shall be provided with approved insulated protective gloves and footwear;
- c. As far as practicable, no wiring or cable, which may come in contact with water or which may be mechanically damaged or which may result in electric shock shall be left on ground or;
- d. All electrical appliances and current carrying equipment used shall be made of sound material and adequately earthed;
- e. All temporary electrical installations shall be provided with earth leakage circuit breakers;
- f. It is required that all portable power-driven hand tools are provided with double insulation to secure a high degree of protection from electrical hazards;
- g. Electrical installations shall comply with the requirements of any law for the time being in force, especially the Indian Electricity Act/Rules in particular with specific reference to the following:
 - i) All parts of installations shall be of standard construction not lower, from the safety point of view, than the national standards, as applicable. All parts of electrical installations shall be so constructed, installed and maintained so as to prevent electrical fires, explosion and shock;
 - ii) Earthing of metal work of electrical equipment, other than the parts which carry current, shall be provided and will conform to Electricity Act and IS: 3042 – 1966 (code of practice for earthing);
- h. All parts of electrical installation shall be adequate size and characteristics for the work they may be called upon to do and in particular they shall:
 - i) Be of adequate mechanical strength to withstand working conditions in construction operations; and
 - ii) Be not liable to damage by water, dust or electrical, thermal or chemical action to which they are subjected to in construction operations;
- i. All parts of electrical installations shall be so constructed, installed and maintained as to prevent the danger of electric shock; fire and external explosion;
- j. It shall be made impossible for circuit breakers to be opened or closed inadvertently, by gravity or by mechanical impact;

- k. Before operation of OCBs, oil level must be checked and the event of short, extra quantity must be filled;
- l. Use of rubber gloves and rubber gum boots of tested quality where electric shock is likely to occur shall be provided, but these shall not be considered as providing adequate protection against the risk of electric shock in lieu of inbuilt safety arrangement in the system;
- m. First-aid boxes, instruction for restoration of persons affected by electric shock shall be made;
- n. Arrangement shall be made for sufficient number of CO₂/chemical powder type fire extinguishers/sand buckets etc.;
- o. No electrical circuits shall ever be overloaded to the dangerous extent or beyond the rated capacity;
- p. In confined areas, only 24 volt supply shall be used for every equipment, including hand-held portable tools and hand lamps;
- q. All electrical appliances and outlets shall be clearly marked to indicate their purpose and voltage.

4.2. FUSES

- a. Fuses shall bear markings indicating their rated current, whether they are of the fast or slow-breaking type and, as far as practicable, and their rated breaking capacity. Fuses as per need and of correct rating shall be used in the circuit;
- b. Effective measures shall be taken to ensure that persons removing or inserting fuses will not be endangered, in particular by any adjacent live parts;
- c. In case of blow of fuses only after finding out and correcting of the fault, new fuses shall be provided in the circuit.

4.3. SWITCHES

- a. All switches shall be of enclosed type and so installed and earthed as to prevent danger in their operation;
- b. Use of switches, which may connect or disconnect circuit through gravity, shall not be used.

4.4. MOTORS

- a. All motors shall be equipped with a switch;
- b. When a motor can be cut off from more than one place, where practicable, a stopping device shall be installed in the immediate vicinity of the motor;
- c. Motors shall be so installed as to ensure that they can be adequately cooled;
- d. Motors shall be effectively protected against over current;
- e. Whenever the motors installed are in the open area where there is the possibility of fall of liquid corrosives or otherwise, it shall be suitably protected with covering;
- f. Earthing shall be connected to all motors, generators etc. as prescribed in the Indian Electricity Rules, amended from time to time.

4.5. CONNECTIONS

- a. At points where conductors are joined, branched or led into apparatus, they shall be:
 - i. Mechanically protected, and
 - ii. Properly maintained;

- b. Conductors shall be joined, branched or led into an apparatus through junction boxes, bushings, glands or equivalent connecting devices;
- c. Junction boxes or plug-out-socket couplings shall be used for joining cables wherever practicable;
- d. When parts of conductors are joined together, or conductors are joined to one another or to an apparatus, the attachment shall be made by screwing, clamping, soldering, riveting, brazing, crimping, or equivalent means. Loose connections shall not be provided in any case;
- e. Cable joints, junction boxes and connectors shall be protected as far as practicable, against traffic, fall of ground, water and other sources of damage;
- f. Whenever armoured cables are joined, the junction boxes shall be bridged by a suitably conductive bond between the armouring of the cables.

4.6. TRANSPORTABLE AND PORTABLE ELECTRICAL EQUIPMENT:

- a. The supply of electricity to portable apparatus shall not exceed 250v;
- b. Hand-held and portable machines shall be equipped with a built-in switch to switch off power in case of emergency;
- c. Hand-held electrically operated tools shall be provided with built-in switch to disconnect the circuit when the tool is not being used;
- d. Portable electrical tools, unless flameproof, shall not be used in flammable or explosive atmosphere;
- e. Only three-core cable shall be used for single-phase operated tools with the third core connected to earth

4.7. HAND LAMPS

- a. Hand lamps shall be equipped with strong cover of glass or other transparent material;
- b. Portable lamp holders shall have:
 - i) All current –carrying parts enclosed;
 - ii) Insulated handle; and
 - iii) They shall operate at 24 v;

4.8. INSPECTION, MAINTENANCE

- a. All electrical equipment shall be inspected before it is taken into use to ensure that it is suitable for its purpose of use;
- b. At the beginning of every shift every person using electrical equipment shall make a careful external examination of the equipment and conductors for which he is responsible, especially flexible cables;

- c. Periodic inspections, testing, maintenance of all electrical equipment is to be made and record of test of transformer oil and pit earthing shall be maintained;
- d. Electrical conductors and equipment shall be repaired by the electrician only as far as practicable, no work shall be done live conductors or equipment;
- e. Before any work is begun on conductors or equipment that does not have to remain live;
 - i) The current shall be switched off;
 - ii) Adequate precautions shall be taken to prevent the current from being switched on again;
 - iii) The conductors or the equipment shall be tested to ascertain that they are dead;
 - iv) The conductor and equipment shall be earthed and short-circuited; and
 - v) Neighbouring live parts shall be adequately protected against accidental contact;
- f. After work on conductors and equipment, the current shall only be switched on again on the orders of a competent person;
- g. Electricians shall be provided with adequate tools, and person protective equipment, such as rubber gloves, mats etc.;
- h. All conductors and equipment shall be considered to live unless there is certain proof to the contrary.

4.9. WORK IN THE VICINITY OF ELECTRICAL INSTALLATION

- a. When work is to be done in the neighborhood of electrical conductors or installations, the contractor shall ascertain the voltage carried and the works shall not be allowed to reach to unsafe distance from them;
- b. When any excavation is to be made or any bore-holed sunk, the contractor shall ascertain whether there are any underground conductors, in or in dangerous proximity to, the zone of operations;
- c. No work shall be done in dangerous proximity to a conductor or an installation until it has been made dead;
- d. Before work begins, work permit shall be obtained from the Engineer in-charge if live electricity lines/circuit are passing in close vicinity;
- e. Before the current is restored, the contractor shall ensure that no work remain on the work site;
- f. If conductor or an installation in the neighbourhood of which work is to be done can not be made dead, special precautions shall be taken and special instructions given to the workers so as to prevent danger by adequately enclosing or fencing;
- g. If mobile equipment has to be employed in the neighbourhood of conductors or installations that cannot be made dead, its movement shall be so controlled as to keep it as a safe distance from them.

5.0 SAFETY IN THE USE OF HAND TOOLS AND POWER-OPERATED TOOLS

5.1 GENERAL PROVISIONS

- a. All hands and power tools and similar equipment, shall be maintained in safe condition.
- b. When power operated tools are designed to accommodate guards, they shall be equipped with such guards, when in use;
- c. Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains and other reciprocating, rotating or moving parts of the equipment shall be similarly guarded;
- d. Personnel using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapours, or gases shall be provided with the particular personal protective equipment necessary to protect them from the hazards;
- e. All hand-held powered platen sanders, grinders, grinders with wheels of 5 cm or less, routers, planers, laminate trimmers, nibblers, shears, scroll saws and jigsaws with blade shanks of 0.5 cm wide or less shall be equipped with only a positive **on-off control**.
- f. All hand-held powered drills, tappers, fastener drivers, horizontal, vertical or angle grinders with wheels greater than 5 cm in diameter, disc sanders, belt sanders, reciprocating saws, saber saws and other operating powered tools shall be equipped with a momentary contact on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

5.2. HAND TOOLS

- a. The contractor shall not issue or permit the use of unsafe hand tools;
- b. Wrenches including adjustable pipe end and socket wrenches shall not be used when saws are sprung to the point that slippage occurs;
- c. Impact tools such as drift pins, wedges and chisels shall be kept free of mushroomed heads;
- d. The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight on the tools.

5.3. POWER OPERATED TOOLS

- a. Electric power operated tools shall be either of the approved double-insulated type or shall be grounded;
- b. The use of electric cords for hoisting or lowering loads shall not be permitted;
- c. Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected;
- d. Safety clips or retainers shall be securely installed or maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled;
- e. All pneumatically riveting machine staplers and other similar equipment provided with automatic fastener feed, which operate at more than 7 kg/cm² pressure at the tool a safety device on the

muzzle to prevent the tool from ejecting the fasteners unless the muzzle is in contact with the work surface;

- f. Compressed air shall not be used for cleaning purposes except when the pressure is reduced to less than 2 kg/cm² and that too with effective chip guarding. The 2 kg/cm² pressure requirement does not apply to concrete form, mill scale and similar cleaning purposes;
- g. The manufacturer's safe operating for hoses, pipes, valves, filters and other fittings shall not be exceeded;
- h. Only personnel who has been trained in the operation of the particular tool shall be allowed to operate power-actuated tools;
- i. The tool shall be tested each day before loading to see that the safety devices are in proper working condition. The method of testing shall be accordance with the manufacturer's recommended procedure;
- j. Any tool found not in proper working order, or that which develops a defect during use, shall be immediately removed from service and not used until properly repaired;
- k. Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any other person. Hands shall be kept clear of the open barrel end;
- l. Loaded tools shall not be left unattended;
- m. Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tiles, surface hardened steel, glass block, live rock, face brick or hollow tiles;
- n. Driving into materials that can be easily penetrated shall be avoided unless backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side;
- o. No fastener shall be driven into a palled area caused by an unsatisfactory fastening;
- p. Only non-sparking tools shall be used in an explosive or flammable atmosphere;
- q. All tools shall be used with the correct shield, guard or attachment as recommended by thee manufacturer.

5.4. ABRASIVE WHEELS AND TOOLS

- a. All grinding machines shall be supplied with sufficient power to maintain the spindle speed at safe levels under all conditions of normal operation;
- b. Grinding machines shall be equipped with suitable safety guards;
- c. The maximum angular exposure of the grinding wheel periphery and sides shall not be more than 90⁰, except that when the work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure shall not exceed 120⁰. In either case, the exposure shall begin not more than 65⁰ above the horizontal plane of the spindle. Safety guards shall be strong enough to withstand the bursting of the wheel;
- d. Floor and bench-mounted grinders shall be work-rests, which shall be rigidly supported and readily adjustable. Such work-rests shall be kept at a distance not to exceed 5 mm from the surface of the wheel;

- e. Cup type wheels used for external grinding shall be protected by either revolving cup guard or a band type guard;
- f. When safety guards are required, they shall be mounted as to maintain proper alignment with the wheel and the guard and the guard and its fastening shall be adequate strength to retain the fragments of the wheel in case of accidental breakage. The maximum angular exposure of the grinding wheel periphery and sides shall not exceed 180°;
- g. Portable abrasive wheel used for internal grinding shall be provided with suitable safety flanges;
- h. When safety flanges are required, they shall be used only with wheels designed to fit the flanges. Only safety flanges, of a type and design and properly assembled so as to ensure that the pieces of the wheel will be retained in case of accidental breakage, shall be used;
- i. All abrasive wheels shall be closely inspected and ring tested before mounting to ensure that they are free from cracks or defects;
- j. Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place;
- k. All employees using abrasive wheels shall be protected by suitable eye protection equipment.

5.5. WOODWORKING TOOLS

- a. All fixed power driven woodworking tools shall be provided with a disconnect switch that can either be locked or tagged in the **off-position**;
- b. The operating speed shall be attached or otherwise permanently marked on all circular saws over 0.5 m in diameter or operating at over 3000 peripheral rpm. Any saw so marked shall not be operated at a speed other than that marked on the blade. When a marked saw is retensioned for a different speed, the marking shall be corrected to show the new speed;
- c. Automatic feeding devices shall be installed on machines wherever the nature of the work will permit. Feeder attachments shall have the feed rolls or other moving parts covered or guarded so as to protect the operator from hazardous points;
- d. All portable power driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

6.0 SAFETY IN THE USE OF LADDERS AND STAIRS

6.1. GENERAL ASPECTS OF SAFETY RELATED TO USE OF LADDERS

- a. Every ladder or step-ladder used in building or other construction work shall be of good construction, made of sound material and of adequate strength for the purpose for which such ladder or step-ladder is used;
- b. When a ladder is used as a means of communication, such ladder shall be lashed to a fixed structure so that while working on such ladder it does not slip;
- c. A ladder or step ladder shall not stand on loose bricks or other loose packing and have a level and firm footing;
- d. No ladder shall be used which has a missing or defective rungs or rungs, which depend for support solely on nails, spikes or other similar fixing.

6.2. MATERIALS FOR LADDERS

- a. Shall be constructed with upright of adequate strength and are made of straight-grained wood, free from defects and having the grain of such wood running length wise;
- b. Shall have rungs made of straight-grained wood free for defects and mortised or securely notched into the upright, reinforcing metal ties, if wedges shall not secure the tenors of such ladders;
- c. Where it is required, in case of use of fixed ladders, sufficient foot-hold and hand-hold shall be provided for use by the building worker;
- d. Every ladder shall be -
 - i. Secured so as to prevent undue swaying;
 - ii. Equally and properly supported on each of its upright;
 - iii. So used as not to cause undue sagging; and
 - iv. Placed as nearly as possible at an inclination of four in one;
- e. The use of all ladders and stepladders shall conform to the approved standards;
- f. Wooden ladders shall be constructed with uprights of adequate strength as well as rungs made of wood free from visible defects and having the grains of the wood in the ladders running lengthwise and rungs mortised or rebuted into the uprights;
- g. Uprights and rungs of metal ladders shall have a cross-section adequate to prevent dangerous deflection, shall be equal and not less than 25 cm or more than 35 cm;
- h. Rungs of metal ladders shall be kept clean so as to prevent them from becoming slippery;
- i. Portable ladders shall not exceed 9 m in length;
- j. Every ladder or run of ladders rising to a height exceeding 9 m shall be provided with an intermediate landing, providing further that the intervals between landings shall not exceed 9 m. The landings shall be of suitable size and protected by railings;
- k. Defective ladders that cannot be satisfactorily repaired shall be tagged Not Fit For Use and destroyed;
- l. Wooden ladders shall not be painted, but oiled or covered with clean varnish or other transparent preservatives;
- m. Metal ladders shall be protected against corrosion by being coated with rust-proof paint or by other means unless they are made of non-corrosive metals;

- n. Every ladder shall rise at least 1 m above the highest point to be reached and have one of the uprights continued to that height to serve as a hand-rail at the top;
- o. Ladders shall not stand on loose bricks or other loose packing but have a level and firm footing so that they are equally supported on each upright;
- p. Every ladder shall be securely fixed so that it cannot move from its top and bottom points of rest and if it cannot be secured at the top, it shall be securely fastened at the base and if fastening at the top is also impracticable, it shall have a man stationed at the foot holding the end to prevent it from slipping;
- q. Where a run of two or more ladders connects different floors, the ladders shall be staggered and a protective landing with the smallest practicable opening shall be provided at each floor;
- r. A ladder having only one upright or a missing or dangerously defective rung shall not be used;
- s. When a ladder is placed in position, the distance between the foot of a ladder and the base of the structure against which it rests shall be about one-quarter of its length;
- t. Workers using ladders shall leave at least one hand free for climbing up and down, face the ladder, avoid wearing slippery footwear and avoid carrying heavy or bulky loads;
- u. A ladder shall not be placed in front of a door that opens towards it unless the door is fastened or locked or guarded;
- v. A ladder shall not be placed against a window frame unless the ladder is fitted with a board at the top so that the applied load is safely distributed over the frame;
- w. Metal ladders shall not be used in the vicinity of live electrical equipment;
- x. Adequate means shall be provided to prevent displacement of the ladder set up in public thoroughfare or where persons, vehicles etc. may accidentally collide with it.

6.3. PORTABLE STEPLADDERS

- a. The length of portable stepladders shall not exceed 6 m and their back legs shall be adequately braced;
- b. Stepladders exceeding 1.5 m in length shall have two or more cross-ties;
- c. The spread between the front and back legs shall be restricted by means of hinged metal flat bars or high-grade fibre or other effective means;
- d. When in the open position, treads of stepladders shall be horizontal.

6.4. PORTABLE TRESTLE LADDERS

- a. The height of the trestle ladders shall not exceed 5.5 m;
- b. The spread between the front and back legs shall be restricted by means of hinged metal flat bars or high-grade fibre or other effective means;
- c. The front and back legs shall be joined at the top by bolted steel hinges of adequate dimensions or other effective means;
- d. Both legs of trestle ladders shall be equipped with sufficient number of steel crossties.

6.5. EXTENSION LADDERS

- a. The length of extension ladders shall not exceed 15 m;
- b. Extension ladders shall be equipped with an effective lock and guide brackets by which the ladder can be extended, retracted or locked in any position;

- c. The rungs of overlapping sections shall coincide so as to form double treads and shall be equipped with one or more extension ropes;
- d. Extension ropes shall be securely anchored and run over suitable pulleys.

6.6 MECHANICAL LADDERS

- a. Mechanical ladder is that ladder, which is a mechanically extendable ladder, mounted on a wheeled frame;
- b. Mechanical ladder shall be equipped with guard-rails and toe-boards and a cage of heavy-gauge steel mesh;
- c. If mechanical ladder has no railed platform or cage, workers using it shall be secured by suitable safety belt;
- d. Mechanical ladders shall not be moved, while a person is on them, unless they have specially designed to ensure that perfect stability is maintained during movement.

6.7. FIXED LADDERS

- a. Uprights of fixed ladders shall be at least 40 cm and shall be set an angle of 15° to the vertical;
- b. Clearance at the back of the rungs shall be at least 15 cm and no obstruction within 75 cm of the face of the ladder;
- c. There shall be at least 7.5 cm clearance between the ladder and the nearest fixed object;
- d. When it is necessary for a ladder to pass closely through a hole in a platform or a floor, the edges of the hole shall be padded so as to prevent injury to the users;
- e. The length of the runs of fixed ladder shall not exceed 9 m;
- f. Landing platform shall be provided for each 9 m or fraction thereof;
- g. As far as practicable, runs shall be staggered;
- h. Runs from which a person could fall from more than 6 m shall be enclosed in a cage of heavy-gauge mesh or hoops;
- i. Fixed ladders shall be firmly bolted or welded in position.

6.8. STAIRS

- a. Stairs shall be of adequate strength to withstand safely the loads that they will have to carry;
- b. Stairs used for the purpose of construction work shall have a clear width of at least 60 cm;
- c. Stairs made of perforated material shall not have openings exceeding 1.2 cm in width;
- d. No step of a stairway shall depend for its support solely on nails, spikes, screws or other similar fixing;
- e. No stairway with missing or dangerously defective steps shall be used;
- f. Every stairway that is at an angle of less than 30° from the vertical shall be provided with a secure handhold at the top landing place, either by extending one upright for at least 1 m or by other effective means;
- g. Movable and removable stairs shall be adequately secured in the position of use;
- h. In all building structures permanent stairs shall be constructed as soon as practicable;
- i. When work on a building has progressed to a height of more than 18 m above the ground and it has not been practical to construct the permanent stairs, sufficient number of stairs shall be provided to ensure safe access to the working levels.

7.0 SAFETY IN THE USE OF LIFTING APPLIANCES & GEARS

7.1. CONSTRUCTION AND MAINTENANCE OF LIFTING APPLIANCES:

All lifting appliances, including their parts and working gear, whether fixed or movable, and any plant or gear used in anchoring or fixing of such appliances -

- a. Shall be of sound construction, sound material, and of adequate strength to serve the purpose for which these are to be used and all such appliances shall be free from patent defects, and
- b. Maintained in good repair and working condition;
- c. Every drum or pulley around which the rope of any lifting appliance is carried, shall be of adequate diameter and sound construction in relation to such rope;
 - i. Any rope that terminates at the winding drum of lifting appliance shall be securely attached to such drum and at least three dead turns of such rope remain on such drum in every operating position of such lifting appliance;
 - ii. The flange of a drum projects twice the rope diameter beyond the last layer of such rope and if such rope and if such projection is not available, other measures like anti-slackness guards shall be provided to prevent such rope from coming off such drum;
- d. Every lifting appliance shall be provided with adequate and efficient brakes which shall be:
 - i) Capable of preventing fall of suspended load (including any test load),
 - ii) Effectively controlling such load while it is being lowered, acting without shock and shall be attached with shoes that can be easily removed for running and which shall be simple and have easily accessible means of adjustment;
- e. Provided that nothing contained above shall apply to **steam-winch** that can be operated as safely as with brakes.

7.2. CONTROLS OF EVERY LIFTING APPLIANCE SHALL BE SO;

- a. Situated that the driver of such appliance at his stand or seat has ample room for operating and has an unrestricted view of building or other construction work, as far as practicable, and that he remains clear of the load and the ropes, and that no load passes over him;
- b. Positioned with due regard to ergonomic considerations for proper operation of such appliance;
- c. Located that the driver of such appliance remains above the appliance and shall have upon them or adjacent to them clear markings to indicate their purpose and mode of operations;
- d. Provided, where necessary, with a suitable locking device to prevent accidental movement or displacement and shall move, as far as practicable, in the direction of the resultant load movement;
- e. Wherever automatic brakes are provided, they shall automatically come to the neutral position in case of power failure.

7.3. TEST AND PERIODICAL EXAMINATION

7.3.1 Test: all lifting appliances including all parts and gears thereof, whether fixed or movable, shall be tested and examined by a competent person before being taken into use for the first time or after it

has undergone any alteration or repairs liable to affect its strength or stability or after erection on a site and also once at least in every five years, in the manner as specified;

7.3.2. Examination: all lifting appliances shall be thoroughly examined by a competent person at least in every twelve months and where the competent person making such examination forms the opinion that the lifting appliance cannot continue to function safely, he shall forthwith give notice in writing of his opinion to the contractor.

7.4. AUTOMATIC LOAD INDICATOR

- a. Cut-out shall be provided which automatically arrests the movement of the lifting parts of every crane if the load exceeds the safe working load, wherever possible;
- b. Wherever the above provisions cannot be applied and if it is not possible to install an automatic safe load indicator, in that case, provision of a table showing the safe working loads at the corresponding inclinations or radii of the jib on the crane shall be considered sufficient.

7.5. INSTALLATION:

Fixed lifting appliances shall be installed by a competent person in a manner that

- a. Such appliances cannot be displaced by the load, vibration or other influences;
- b. The operator of such appliance is not exposed to danger from loads, ropes or drums;
- c. The operator can either see over the zone of operation or communicate with all loading and unloading points by signal, or other communication system;
- d. Adequate clearance is provided between parts or loads of lifting appliances and between the fixed objects such as walls and posts, or electrical conductors;
- e. The lifting appliances; when exposed to wind loading, are given sufficient additional strength, stability and rigidity to withstand such loading safely;
- f. No structural alterations or repairs are made on any part of the lifting appliances that affect the safety of such appliances without obtaining the opinion of the competent person to this effect.

7.6. WINCHES

- a. Winches shall not be used if their control levers operate with excessive friction or play;
- b. Double gear winches shall not be used unless a positive means of locking the gearshift is provided;
- c. There shall be no load other than the fall and the hook assembly on the winch while changing gears on a two-gear winch;
- d. Adequate protection shall be provided to the winch operator against abnormal weather;

- e. Temporary seats or shelters for winch operators that may pose hazard to the winch operator or any other building workers shall not be allowed to be used;
- f. Control levers shall be secured in the neutral position and, whenever possible, the power shall shut off if the winch is left unattended.

7.7. IN USE OF EVERY STEAM-WINCH

- a. Measures shall be taken to prevent escaping steam from obscuring any part of the construction site or other workplace or from otherwise hindering or injuring any building worker;
- b. Extension control levers which tend to fall off their own weight shall be counter-balanced;
- c. Winch operators shall not be permitted to use the which control extension levers except for short handles on wheel type controls and that such levers shall be of adequate strength, secure and fastened with metal connections at the fulcrum and at the permanent control lever;
- d. In use of every electric winch, no building worker shall be permitted to transfer, alter or adjust electric control circuits in case of any defect in such winch;

7.8. ELECTRIC WINCHES SHALL NOT BE USED FOR BUILDING WORK WHERE

- a. The electromagnetic brake is unable to hold the load; or
- b. One or more control points either hoisting or lowering are not operating properly.

7.9. BUCKETS:

It shall be ensured that tip-up buckets are equipped with a device that effectively prevents accidental tipping.

7.10. IDENTIFICATION AND MARKING OF SAFE WORKING LOAD:

- a. Every lifting appliance and loose gear shall be clearly marked for its safe working load and identification by stamping or other suitable means;
- b. Every derrick (**other than derrick crane**) shall be clearly marked for its safe working load when such derrick is used either in single purchase with lower block or in union purchases in all possible block positions;
- c. The lowest angle to the horizontal, to which the derrick may be used, shall be legibly marked;
- d. Every lifting appliance having more than one working load shall be fitted with effective means to enable the operator to determine safe working load at each point under all conditions of use;
- e. Means to ascertain the safe working load for lifting gears under such conditions in which such gears may be used shall be provided to enable a worker using such gears and such means safely, which shall comprise:
 - i) Marking of the safe working load in plain figures or letters upon the sling or upon a tablet or ring of durable material attached securely thereto in case of chain slings; and

- ii) The means specified or notices so exhibited as can be easily read by any concerned building worker stating the safe working load for the various sizes of the wire rope slings used.

7.11 LOADING OF LIFTING APPLIANCES AND LIFTING GEARS

- a. No lifting appliance, lifting gear or wire rope shall be used in an unsafe way and in such a manner as to involve risk to life of building workers and they are not loaded beyond their safe working load except for testing purposes under the direction of a **competent person** in the manner as specified in schedule;
- b. No lifting appliance and lifting gear, or any other material-handling appliance shall be used if the Inspector having jurisdiction under the Building and Other construction (regulation of employment and conditions of service) Act/Rules is not satisfied with reference to a certificate of test or examination or to an authenticated record maintained as provided under the Rules or if in his view the lifting appliance, lifting gear or any other material handling appliance is not safe for use in building or other construction work;
- c. No pulley block shall be used unless the safe working load and its identification are clearly marked on such block.

7.12. OPERATOR'S CAB OR CABIN SHALL

- a. Be made of fire resistant material;
- b. Have a suitable seat, a foot rest and protection from vibration;
- c. Afford the operator an adequate view of the area of operation;
- d. Afford the necessary access to working parts in the cab;
- e. Afford the operator adequate protection against the weather;
- f. Be adequately ventilated; and
- g. Be provided with a suitable fire extinguisher.

7.13. OPERATION OF LIFTING APPLIANCES:

Operator of every crane or lifting appliance shall possess adequate skill and training in the operation of the particular lifting appliances, provided further that

- a. No person under eighteen years of age shall be in control of any lifting machine, scaffold winch, or give signals to the operator;
- b. Precaution shall be taken by the trained operator to prevent lifting appliance from being set in motion inadvertently;
- c. The operation of lifting appliances shall be governed by signals in conformity with the approved standards;
- d. The operator's attention shall not be distracted while he is working;
- e. No crane, hoist, winch or other lifting appliance or any part of such crane, hoist, winch or other lifting appliance shall, except for testing purposes, be loaded beyond the safe working load;
- f. During the hoisting operation, effective precaution shall be taken to prevent any person from standing or passing under the load in such operation;

- g. Operator shall not leave lifting appliance unattended while power is on or the load is suspended to such appliance;
- h. No person shall ride on a suspended load of any lifting appliance;
- i. Every part of a load in course of being hoisted or lowered shall be adequately suspended and supported to prevent danger;
- j. Every receptacle used for hoisting bricks, tiles, slates or other material shall be suitably enclosed as to prevent the fall of any such material;
- k. The hoisting platform shall be enclosed when loose material or loaded wheel barrows are placed directly on such platform or lowering such materials or wheel barrows;
- l. No material shall be raised, lowered or slewed with any lifting appliance in such a way as to cause sudden jerks to such appliance;
- m. In hoisting a barrow, any wheel of such barrow shall not be used as a means of support unless adequate steps have been taken to prevent the axle of such wheel from slipping out of its bearing;
- n. Long objects like planks or girders shall be provided with tag line to prevent any possibility of danger while raising or lowering such objects;
- o. During the process of landing or material, a building worker shall not be permitted to lean out into empty space for finding out the loading and unloading of such material;
- p. When hoisting of load is done in an enclosed space, neither the lifting material nor the boom shall project outside the enclosed space;
- q. Adequate steps shall be taken to prevent a load, in the course of being hoisted or lowered from coming into contact with any object to avoid any displacement of such load and appropriate appliances provided and used for guiding heavy loads when raising or lowering heavy loads to avoid crushing of hands of building workers during such raising or lowering of loads.

7.14. HOISTS

- a. Hoist towers shall be designed according to the relevant national standards;
- b. Hoist shafts shall be provided with rigid panels or other adequate fencing at the ground level on all sides of such shafts and at all other levels on all sides of the access to such shafts while the walls of hoist shafts, except at approaches, extend at least two meters above the floor or platform of access to such shafts;
- c. Approaches to hoist shall be adequately lit and provided with gates that shall be guarded to maintain visibility at least of two meters height; and equipped with a device, which requires such gate to be closed before the platform of such hoist can leave the landing, and prevents the gate from being opened unless such platform is at the landing;
- d. The guides of hoist platforms shall offer sufficient resistance to bending and to bucking in the case of jamming, by providing a safety catch;
- e. Overhead beams and their supports are capable of holding the total maximum live and dead loads that such beams and supports will be required to carry, with a safety factor of at least five;

- f. A clear space shall be provided –
- i. Above the highest stopping place of a cage or platform to allow sufficient unobstructed travel of such cage or platform in case of over-winding and
 - ii. Below the lowest stopping place of such cage or platform;
- g. Adequate covering shall be provided above the top of hoist shafts to prevent materials from falling into such shafts;
- h. Outdoor hoist towers shall be erected on adequately firm foundations and securely braced, guyed and anchored;
- i. A ladder way shall extend from the bottom to the top of every outdoor hoist tower in case no other ladder way exists within easy reach and such ladder way shall comply with the relevant national standards;
- j. The rated capacity of a hoisting engine shall at least be one and a half times the maximum load that such engine will be required to move;
- k. All gearing on a hoisting engine shall be securely enclosed;
- l. Steam piping of hoisting engine shall be adequately protected against accidental contact of such piping with a building worker;
- m. Electrical equipment of a hoisting engine shall be effectively earthed;
- n. A hoist shall be provided with suitable devices to stop a hoisting engine as soon as the platform of such hoist reaches its highest stopping place;
- o. A hoisting engine shall be protected by suitable cover against weather and falling objects;
- p. A hoisting engine set up in a public thoroughfare shall be completely enclosed;
- q. All exhaust steam pipes shall discharge steam in such a manner that the steam so discharged does not scald any person or obstruct the operator's view;
- r. The motion of a hoist shall not be reversed without first bringing it to rest to avoid any harm from such reverse motion;
- s. A hoist not designed for the conveyance of persons shall not be set in motion from the platform of such hoist;
- t. Pawls and ratchet wheels of a hoist, requiring disengagement of such pawls from such ratchet wheels, before the platform of such hoist is lowered, shall not be used;
- u. A platform of a hoist shall be capable of supporting such maximum load that such platform may carry with a safety factor of at least three;
- v. A platform of a hoist shall be equipped with suitable safety gear which can hold such platform with its maximum load in case its hoisting rope breaks;
- w. On platform of a hoist, the wheel barrows or truck shall be efficiently blocked in safe positions;

- x. A cage of a hoist or platform where the building workers are required to enter into such cage or to go on such platform at landing levels, shall be provided with a locking arrangement to prevent such cage or platform from moving during the time a worker enters or leaves such cage or platform;
- y. The sides of platform of a hoist which are not used for loading or unloading, shall be provided with toe-board and enclosures of a wire mesh or any other suitable means to prevent the fall of any part of a load from such platform, further provided that
 - i. The platform of a hoist, which has any probability of falling of any part of a load from it, shall be provided with an adequate covering to prevent such fall;
 - ii. The counter weights of a hoist consisting of an assemblage of several parts shall be so constructed that such parts shall be rigidly connected together;
 - iii. The counter weights of a hoist shall run between guides;
 - iv. At every level of work the building workers shall be provided with adequate platforms for performing such work;
 - v. A legible notice in Hindi as well as in a local language shall be displayed in a conspicuous place of the platform of a hoist and that such notice shall state the maximum carrying capacity of such hoist in kilograms on the hoisting engine;
 - vi. On a hoist authorized and certified for the conveyance of the persons on the platform or in the cage and such notice shall state the maximum number of persons to be carried on such hoist at one time;
 - vii. On a hoist carrying goods and other materials such notice shall state that such hoist is not meant for carriage of persons.

7.15. FENCING AND MEANS OF ACCESS TO LIFTING APPLIANCES

- a. Safe means of access shall be provided to every part of lifting appliances;
- b. The operator's platform on every crane or tip driven by mechanical power shall be securely fenced and provided with safe means of access and where access to such platform is by a ladder, the sides of such ladder shall extend to a height reasonable beyond such platform or some other suitable handhold shall be provided in the platform;
- c. The handling place on such platform shall be maintained free from obstruction and slipping; and
- d. In case the height of such ladder exceeds six meters, the resting platforms shall be provided on such ladder at every six meters of its height and where the distance between last platform so provided and the top end of such ladder is more than two meters then on such top end.

7.16. RIGGING OF DERRICKS:

Every derrick shall have current and relevant rigging plans and any other information necessary for the safe rigging of such derrick and its gear.

7.17. SECURING OF DERRICK FOOT:

Appropriate measures shall be taken to prevent the foot of a derrick from being lifted out of its socket or supports.

7.18. CONSTRUCTION AND MAINTENANCE OF LIFTING GEAR

- a. Every lifting gear shall be –
 - i. of good design and construction, sound material and adequate strength to perform the work for which it is used;
 - ii. free from patent defects; and
 - iii. properly maintained in good repair and working order;
- b. Components of the loose gear, at the time of its use, shall be renewed if one of its dimensions at any point has decreased by ten per cent or more;
- c. A chain shall be withdrawn from use when it is stretched and increased in length which exceeds five per cent of its length or when a link of such chain is deformed or is otherwise damaged or defects in the welds have appeared on it;
- d. Rings, hooks, swivels and end links attached to a chain shall be of the same materials as that of such chain;
- e. The voltage of electric supply to any magnetic lifting device shall not fluctuate by more than **plus** or **minus** 10%.

7.19. TEST AND PERIODICAL EXAMINATION OF LIFTING GEARS

- a. A lifting gear shall be initially tested for the manufacturer by a competent person in a manner specified as per schedule annexed before taking into use or after undergoing any substantive alterations which renders its any part liable to affect its safety and such gear after such test shall subsequently be retested for the use of its owner at least once in every five years;
- b. A lifting gear in use shall thoroughly examined once at least in every twelve months by a competent person;
- c. A chain in use shall be thoroughly examined at least once every month by a responsible person for its use;
- d. Certificates of initial and periodical test and examinations of loose gears shall be obtained in the form annexed.

7.20. ROPES

- a. No rope shall be used for building or other construction work unless -
 - i) It is of good quality and free from patent defects; and
 - ii) In the case of wire rope, it shall be tested and examined by a competent person in the manner annexed;
 - iii) Every wire rope of lifting appliance or lifting gear used for building or other construction work shall be inspected by a responsible person for such use, once at least in every three month;

- b. Provided that after if any such wire is broken in such rope, the responsible person shall thereafter inspect it once at least in every month and ensure that;
- c. No wire rope shall be used for building or other constructing work if in any length of eight diameters of such wires, the total number of visible broken wires exceed ten per cent of the total number of wires in such rope, or such rope shows signs of excessive wear, corrosion or other defects which in the opinion of the person who inspects it, is unfit for use;
- d. Eye splices and loops of ropes for the attachment of hooks, rings and other such parts to wire rope shall be made with suitable thimble;
- e. A thimble or loop splice made in any wire rope sling shall conform to the following standards, namely:
 - i) Wire rope sling shall have at least three tucks with full strand of rope and two tucks with one-half of the wires cut out of each of such strand in all cases, such strands shall be tucked against the lay of the rope;
 - ii) Protruding ends of such strands in any splice of wire rope slings shall be covered or treated so as to leave no sharp points;
 - iii) A fiber rope or a rope sling shall have at least four tucks, tail of such tuck being whipped in a suitable manner; and
 - iv) A synthetic fiber rope or rope sling shall have at least four tucks with full strands followed by further tuck with one-half filaments cut out of each of such strand and final tuck with one-half of the remaining filaments cut out from such strands. Any portion of the splices containing such tucks, with reduced number of filaments, shall be securely covered with suitable tape or other materials;
 - v) Provided further that nothing contained above shall apply where any other form of splice, which may be shown to be as efficient as the splice with above standards, shall be used.

7.21. HEAT TREATMENT OF LIFTING GEARS

- a. All chains other than bridle chains attached to derricks and all rings, hooks, shackles and swivels used in hoisting or lowering of such derricks shall be effectively annealed under supervision of a competent person and at the following intervals, namely:
 - i) Such chains, rings, hoods, shackles and swivels which are not more than twelve and a half millimeter of length annealed at least once in every six months; and
 - ii) All other such chains rings hooks shackles and swivels shall be so annealed at least once in every twelve months;
- b. Provided that the clause (a) above shall not apply to -
 - i) Pitched chins, working on sprocket or sprocket wheels;
 - ii) Rings, hooks and swivels permanently attached to pitched chains, pulley blocks or weighing machines, and
 - iii) Hooks and swivels having ball bearings or other case hardened parts;

- c. A chain or a loose gear made of high tensile steel or alloy steel shall be plainly marked with a mark indicating that it is so made;
- d. No chain or loose gear made of high tensile steel or alloy steel shall be subjected to any form of heat treatment except where such treatment is necessary for the purpose of repair of such chain or loose gear and that such repair shall be made under the direction of the competent person;
- e. That the wrought iron gear, the past history of which is not traceable, shall be suspected of being heat treated at incorrect temperature shall be normalized before using it on any building or other construction work.

7.22. CERTIFICATE TO BE ISSUED AFTER ACTUAL TESTING AND EXAMINATION ETC:

A competent person shall issue a certificate after actual testing or examination of the apparatus specified and record of such test or examination shall be maintained for inspection.

7.23. REGISTER OF PERIODICAL TEST, EXAMINATION AND CERTIFICATION THEREOF

- a. A register in the form annexed shall be maintained and particulars of such test and examination of lifting appliances, lifting gears and heat treatment as required shall be entered in such register;
- b. Certificate in respect of each of the following shall be obtained from a competent person:
 - i) In cases of initial and periodical test and examination of the lifting appliances such as Winches, Derricks and their accessory gears, Cranes or Hoists and their accessory gears;
 - (ii) In case of test, examination and re-examination of loose gears;
 - (iii) In case of test and examination of wire ropes;
 - (iv) In case of heat treatment and examination of loose gears;
 - (v) In case of annual thorough examination of the loose gears, except where required particulars of such exemption have been enclosed in the register referred to in Form annexed and such certificates are attached to the register referred to as above and certificates kept at such construction site in case such register and certificate relate to lifting appliances, loose gear and wire ropes and
- c. Produced on demand and retained for at least five years after the date of the last entry made in such register;
- d. No lifting appliance or lifting gear in respect of which an entry is required to be made in register referred to above and certificate of test and examination are required to be attached in such register in the manner as specified, shall be used for building or other construction work unless the required entries have been made in such register and certificates.

7.24. VACUUM AND MAGNETIC LIFTING GEAR

- a. No vacuum lifting gear, magnetic lifting gear or any other lifting gear where the load on it is held by adhesive power, shall be used while workers are performing operations beneath such gear;
- b. A magnetic lifting gear used in connection with building or other construction work shall be provided with an alternative supply of power, such as batteries, which may come into operation immediately in the event of failure of the main power supply;

- c. No building worker shall work within the swinging zone of the lifting gear or load or building or other construction material suspended to such lifting gear.

7.25. KNOTTING OF CHAINS AND WIRE ROPES:

No chain or wire rope with a knot in it shall be used in building or other construction work.

7.26. CARRYING OF PERSONS BY MEANS OF LIFTING APPLIANCES ETC.

- a. No building worker shall be raised, lowered or carried by a power driven lifting appliance, except
 - i. On the drive's platform in the cage of a crane; or
 - ii. On as hoist; or
 - iii. On an approved suspended scaffold;
- b. Provided that a building worker may be raised, lowered or carried by a power driven lifting appliance:
 - i. In circumstances where the use of a hoist or of a suspended scaffold shall not reasonably be practicable, or
 - ii. On an aerial cableway or aerial ropeway, provided further that the following requirements are met:
 - iii. That the appliance referred to above can be operated from one position only and that
 - iv. Any winch used in connection with the appliance shall also comply with the requirements as laid down above.
- c. The appliance referred to above shall not carry any person except:
 - i. In a chair or cage,
 - ii. In a skip or other receptacle at least three feet deep which shall be suitable for safe carriage of a person and any such chair, cage, skip or other receptacle shall be made of good construction, sound material, and adequate strength and properly maintained with suitable means to prevent any occupant therein from falling out of it and shall be free from any material or tools which may interfere with the handhold or foothold of such occupant or otherwise endanger him; and
 - iii. Those suitable measures shall be taken to prevent the chair, cage skip or other receptacle from spinning or tipping in a manner dangerous to any occupant therein.

7.27. HOISTS CARRYING PERSONS

- a. No building worker shall be carried with the help of a hoist unless it is provided with a cage which:
 - i) Is so constructed as to prevent, when its gates are shut, any building worker carried by such hoist from falling out of it or from being trapped between any part of such cage and any fixed structure or other moving part of such hoist or from being struck by articles or materials falling down the hoist way on which such hoist is moving; and
 - ii) Is fitted on each of its side from which access is provided to a landing place with a gate which has efficient interlocking or other devices to secure so that such gate cannot be opened except when such cage is at a landing place and that such cage cannot be moved away from any such place until such gate is closed;

- b. Every gate in the hoist way enclosure of such hoist used for carrying persons shall be fitted with efficient interlocking or other devices to secure so that such gate cannot be opened except when the cage of such gate is at the landing place and that such cage cannot be moved away from the landing place until such gate is closed;
- c. In every hoist used for carrying building workers there are provided with suitable and efficient automatic devices to ensure that the cage of such hoist comes to rest at a point above the lowest point to which such cage may travel.

7.28. ATTACHMENT OF LOADS

- a. When a sling is used to hoist long materials, a lifting beam shall be used to space the sling legs for proper balance and when a load is suspended at two or more points with slings, the eyes of the lifting legs of such slings shall be shackled together and such shackled eyes of the shackled slings shall be placed on the hook or the eyes of such lifting legs shall be shackled directly to the hoisting block, ball or balance beam, as the case may be;
- b. Every container or receptacle used for raising or lowering stone, bricks tiles, slates or other similar objects shall be so enclosed with the hoist as to prevent the fall of such objects;
- c. A loaded wheel barrows placed directly on a platform of a hoist for raising or lowering of such wheel barrows shall be so secured that such wheel barrows cannot move and such platform shall be enclosed to prevent the fall of the contents kept in such wheel barrows;
- d. Landings of hoists shall be so designed and arranged that building workers on such hoist be not required to lean out into empty space for loading and unloading on any material from such hoist

7.29. TOWER CRANES

- a. No person other than the operator trained and capable to work at heights shall be employed to operate tower cranes;
- b. The ground on which a tower crane stands shall have adequate bearing capacity;
- c. Bases for tower cranes and trucks for rail mounted tower cranes shall be firm and leveled and such cranes erected at a reasonably safe distance from excavations and operated within gradient limits as specified by the manufacturer of such cranes;
- d. Tower cranes shall be sited where there is a clear space available for erection, operation and dismantling of such cranes;
- e. Tower cranes shall be sited in such a way that the loads on such cranes shall not be handled over any occupied premises, public thoroughfares, railways or near power cables, other than construction works for which such cranes are used;
- f. Where two or more tower cranes are sited and operated, every care shall be taken to ensure positive and proper communication between operators of such cranes to avoid any danger or dangerous occurrences;
- g. Tower cranes shall not be used for loading magnet, or demolition ball service, piling operation or other similar operations which could impose excessive load stresses on the crane structure of such cranes;

- h. The instruction of the manufacturer of a tower crane and standard safe practices regarding such cranes shall be followed while operating or using such cranes.

7.30. QUALIFICATION OF OPERATOR OF LIFTING WINCHES AND OF SIGNALER ETC.

- a. No person shall be employed to drive or operate a lifting appliance whether driven by mechanical power or otherwise or to give signals to driver of operator of such lifting appliance or to work as an operator of a rigger or derricks unless he is
 - i) Sufficiently competent and reliable;
 - ii) Possesses the knowledge of the inherent risks involved in the operation of lifting appliance;
 - iii) Medically examined periodically as specified and
 - iv) Is above eighteen years of age.

8.0 SAFETY IN THE USE OF TRANSPORT, EARTHMOVING EQUIPMENT & OTHER CONSTRUCTION MACHINERY

8.1 EARTHMOVING EQUIPMENT AND VEHICLES

- a. All vehicles and earthmoving equipment shall be made of good material, proper design and sound construction and be sufficiently strong for the purpose for which such equipment are properly used in accordance with standard safe operating practices;
- b. Provided that the truck or trailer employed for transporting freight containers shall be of the size sufficient to carry the containers, without over hanging and provided with twist locks conforming to approved standards, at all the four corners of each of such use by an authority under the relevant law for the time being in force and is inspected by a responsible person, at least once in a month and record of such inspection shall be maintained;
- c. All transport or earth moving equipment and vehicles shall be inspected at least once a week by a responsible person and in case any defect is noticed in such equipment or vehicle it shall be immediately taken out of use;
- d. Power trucks and tractors shall be equipped with effective brakes, headlights and tail lamps and maintained in good repair and working order;
- e. Side stanchions on power trucks and trailers for carrying heavy and long objects shall be
 - i. Of sound construction and free from defects;
 - ii. Provided with tie chains attached to the top across the loads for preventing such stanchions from spreading out; and
 - iii. Kept in position while loading and unloading;
 - iv. Safe gangways provided for to and fro movement of building workers engaged in loading and unloading of lorries, trucks, trailers and wagons;
 - v. Trucks and other equipment shall not be loaded beyond their safe capacity and carry workers engaged in loading and unloading of lorries, trucks trailers and wagons in an unsafe condition;
 - vi. Handles of trucks shall be so designed as to protect the hands of the building workers working on such trucks, or such handles provided with knuckle guards;
 - vii. No unauthorized person shall ride the transport equipment employed in such work;
 - viii. A driver of a transport equipment shall maneuver such equipment under the direction of a signaler;
 - ix. Adequate precaution such as isolating the electric supply or erecting overhead barriers of a safe height shall be taken when earth moving equipment or vehicles are required to operate in dangerous proximity to any live electric conductor;
 - x. Vehicles and earth moving equipment shall not be left on a slope with the engine of such vehicles or equipment running;

- xi. All earth moving equipment, vehicles or other transport equipment shall be operated only by such person who are adequately trained and possess such skills as required for safe operation of such equipment, vehicle or other transport equipment.

8.2. POWER SHOVELS AND EXCAVATOR

- a. A shovel or an excavator whether operated by steam or electric or by internal combustion, shall be constructed, installed, operated, tested and examined as per approved standards;
- b. Excavator equipped for use as a mobile crane shall be examined and tested in accordance with the requirements for such mobile cranes as laid down by the manufacturer; and
- c. Fitted with an automatic safe working load indicator;
- d. Buckets or grabs of power shovels shall be propped to restrict the movement of such buckets or grabs while being repaired or while the teeth of such buckets or grabs are being changed.

8.3. BULLDOZER

- a. Operator of every such bulldozer before leaving the dozer shall take the following steps:
 - i) Apply the brakes;
 - ii) Lower the blade and sipper and
 - iii) Put the shift lever into neutral;
 - iv) Dozer left on level ground at the close of the work for which such bulldozer is used;
 - v) The blade of a bulldozer kept low when such bulldozer is moving uphill;
 - vi) The bulldozer blades not used as brakes except in an emergency.

8.4. SCRAPERS

- a. A tractor and scraper shall be joined by safety line at the time of its operation;
- b. The scraper bowls shall be propped while blades of such scraper are being replaced;
- c. A scraper moving downhill shall not be left in gear.

8.5. MOBILE ASPHALT LAYERS & FINISHERS

- a. A mixture elevator shall be located within a wooden or sheet metal enclosure with a window for observation, lubrication and maintenance;
- b. Bitumen scoops shall have adequate covers;
- c. When asphalt plants are working on public road, adequate traffic control shall be established on such road and the building workers working with such plant provided with reflective jackets;
- d. A sufficient number of fire extinguishers shall be kept in readiness at such workplace where fire hazards may exist;
- e. The materials shall be loaded on the elevator after the drying drain has warmed up of such elevator;
- f. No open light shall be used for ascertaining the level of asphalt;

- g. Inspection opening shall not be opened till there is a pressure in the boiler, which may cause injury to building workers.

8.6. PAVERS:

Pavers shall be equipped with guards suitable to prevent building workers from walking under the skip of such pavers.

- 8.7. Road rollers:** Before a road roller is used on the ground, such ground shall be examined for its bearing capacity and general safety, especially at the edges of slopes such as embankment on such grounds and shall not be moved downhill with the engine out of gear.

8.8. GENERAL SAFETY IN RESPECT OF POWERED CONSTRUCTION MACHINERY

- a. Every vehicle or earthmoving equipment shall be equipped with -
 - i) Silencers;
 - ii) Tail lights
 - iii) Power and hand brakes;
 - iv) Reversing alarm; and
 - v) Search light for forward and backward movement, which are required for safe operation of such vehicle or earthmoving equipment;
- b. The cab of vehicle or earthmoving equipment shall be kept at least one meter from the adjacent face of a ground being excavated;
- c. When cranes or shovel are traveling, the boom of such crane or shovel shall be in the direction of such travel and the bucket or scoop attached to such crane or shovel raised and without load except when such traveling is downhill.

9.0 SAFETY IN THE PROVISION OF RUNWAYS AND RAMP

9.1. USE OF RUNWAYS AND RAMPS:

- a. Runway or ramps shall not be less than 430 mm in width and constructed of not less than 25 mm thick planking or any other material of adequate strength to withstand the required load, supported substantially in relation to the span and braced with such runway or ramp, and design and construction of such runway or ramp shall be in accordance with the approved standards;
- b. Every runway or ramp located more than 3 m above the floor or ground shall be on open sides and provided with a guardrail of adequate strength and height of not less than 1 m.
- c. Use of runways and ramps by vehicles:
 - i. All runways and ramps shall be of sound construction, strength and securely braced and supported;
 - ii. Every runway or ramp for the use of transport equipment like trailers, trucks or heavier vehicles shall have a width of not less than 3.7 m and provide with timber curbs or any other material of adequate strength with not less than 200 mm by 200 mm in width placed parallel to, and secured to, the sides of such runway or ramp and such runways or ramps or ramps shall be designed in accordance with the approved standards.

9.2. SLOPE OF RAMPS:

Every ramp shall have a slope not exceeding one in four and the total rise of a continuous ramp used by building workers carrying material or using wheelbarrows shall not exceed 3.7 m, unless broken by horizontal landing of at least 1.2 m in length.

9.3. USE OF RUNWAYS OR RAMPS BY WHEELBARROWS, ETC.

- a. Every runway or ramp used for wheelbarrows and carts or hand trucks shall not be less than 1 m width and constructed of not less than 50 mm thick planking, and supported and braced suitably for such use;
- b. Every runway or ramp located more than 3 m above the floor or ground shall be provided on the open sides with suitable guardrails of adequate strength.

10. SAFETY IN HANDLING AND USE OF EXPLOSIVES

10.1 GENERAL PROVISIONS:

- a. The use of explosives shall be carried out in a safe manner to avoid injury to any person and under the direct supervision of a responsible person;
- b. No person other than authorized and competent one shall be allowed to handle and use explosives;
- c. Before using any explosive, necessary warning and danger signals shall be erected, at conspicuous places of such use to warn the building workers and the general public of the danger involved in such use.
- d. No person other than authorized and competent one shall be allowed to handle and use explosives.
- e. Smoke, open lamps, other type of hot or heat producing items and sparks shall be prohibited in or near explosives magazines or while explosives are being handled, transported or used.
- f. No person shall be allowed to handle or use explosives while under the influence of intoxicating liquors or dangerous drugs.
- g. The explosives shall be accounted for at all times. No explosives or blasting agents shall be abandoned.
- h. No fire shall be fought where the fire is in the imminent danger of contact with explosives. All employees shall be removed to a safe area and the fire area shall be guarded against intruders.
- i. Employees authorized to prepare explosive charges or conduct blasting operations shall use every reasonable precaution including but not limited to visual and audible warning signals, flags, or barricades to ensure employee safety.
- j. Due precautions shall be taken to prevent accidental discharge of electric blasting caps from current induced by induced voltage, lightning, adjacent power lines, dust storms, or other sources of extraneous electricity or otherwise. These precautions shall include:
- k. Short-circuiting of detonators in holes, which have been primed and shunted until wired into the blasting circuit.
- l. The suspension of all blasting operations and removal of persons from the blasting area during the approach and progress of an electric storm.
- m. The prominent display of adequate signs, warning against the use of radio transmitters, on all roads within 1000 ft of blasting operations. Whenever adherence to the 1000 ft distance would create an operational handicap, a competent and expert person shall be consulted to evaluate the particular situation, and an alternative provided, which are adequately designed to prevent any premature firing of electric blasting of caps. A description of any such blasting shall be reduced to writing and shall be certified as meeting the purposes of this subdivision by the competent person consulted. The description shall be maintained at the construction site during the duration of the work, and shall be available for inspection.

- n. Empty boxes and paper and fiber packing materials, which have previously contained high explosives, shall not be used again for any purpose, but shall be destroyed by burning at an approved location.
- o. Explosives, blasting agents and blasting supplies that are obviously deteriorated or damaged shall not be used.
- p. Delivery and issue of explosives shall only be made authorized persons into authorized magazines or approved temporary storage or handling areas.
- q. Blasting operations in the proximity of overhead power lines, communication lines, utility services, or other services and structures shall not be carried on until the operators and/or owners have been notified and measures for safe control have been taken. In such situations controlled blasting shall be restored to.
- r. All loading and firing shall be directed and supervised by competent persons thoroughly experienced in this field.
- s. Loaded boreholes shall not be left unattended after the end of the shift.
- t. Suitable and sufficient means of egress to ground level shall be provided in all cases of excavations, trenches, all other places where explosives are handled above or below ground level.
- u. At an appropriate time before the final blasting warnings, workers in the area shall be removed to a designated safe place.
- v. An unmistakable, audible, final warning shall be sounded one minute prior to the detonation of explosives; after completion, when the person in charge has established that safe conditions prevail, an "all clear" shall be sounded.
- w. To prevent persons entering any danger zone during blasting operations notices shall be given to all concerned.
- x. Notices referred above shall indicate:
 - i. that explosives are in use;
 - ii. the audible warning sound and the "all clear" and state when they will be sounded; and
 - iii. the warning flags in use, including an "all clear" flag.
- y. Precautions against lightning shall be provided in accordance with the Indian Electricity Act and Indian Explosives Act and Rules and regulations framed there under.
- z. Package containing explosives shall not be dragged, dropped or handled roughly.
- aa. Non-sparking tools shall be used to open keys.
- bb. The explosives shall not be carried in the box or otherwise on any individual.
- cc. Nothing shall be inserted in the open end of the blasting cap except fuses.

dd. Deteriorated or damaged explosives shall not be used but shall be disposed or destroyed strictly in accordance with the approved methods and in the doing so the manufacturers or the appropriate authority's instructions shall be followed.

ee. lightning shall be in accordance with Indian Electricity Act/Rules

10.2. TRANSPORTATION OF EXPLOSIVES

- a. Keep safe distance and to use non-sparking tools while opening packages containing explosives;
- b. Stop the use of explosives and handling thereof while the weather conditions are not suitable for such use or handling;
- c. Due precautions shall be taken to prevent accidental discharge of electric blasting caps from current induced by induced voltage, lightning, adjacent power-lines, dust storms or other sources of extraneous electricity or otherwise. These precautions shall include –
 - i. Suspension of all blasting operations and evacuation of persons;
 - ii. All warning signs shall be displayed within 200 m of blasting operations and in case putting up a sign at 200 m is impractical, the contractor shall consult the Engineer-in-charge for alternatives;
 - iii. All loading and firing shall be directed and supervised by competent persons thoroughly experienced in the field;
 - iv. To prevent persons entering any danger zone during blasting operations, notices shall be given to all concerned;
- d. In addition to these provisions, all measures and precautions that are required to be observed for use, handling, storing or transportation of explosives under the Rules framed under the Explosives Act, 1884 (4 of 1884) shall be observed;
- e. All the relevant statutory provisions, local laws and rules and regulations shall be complied with.
- f. Where the magazine is located near the construction site and blasting operation continues daily, actual requirement of explosives shall be drawn from the magazine and transported to the site. Any leftovers shall be returned to the magazine each time after the blast. In case of work at scattered places and for a small duration, portable magazines shall be used and kept within a fence in safe place and properly guarded.
- g. For carrying higher quantity (more than 5 kg of explosives) specially designed insulated containers shall be used. These containers shall be constructed of finished wood not less than 5cm thick or plastic not less than 6mm thick or pressed fibre not less than 10mm thick. There shall be no metal parts (not even nails, bolts, screws etc.) and the containers shall be provided with suitable non-conductive carrying device, such as rubber, leather or canvas handle or strap.
- h. Vehicles to be used for transportation explosives shall be in good working condition and shall have a tight wooded or non-sparking metal (copper, brass and the like) floor with sides and

ends high enough to prevent the explosives from falling off the vehicle. In open bodied vehicles, the explosives shall be covered with a waterproof and fibre tarpaulin.

- i. Electrical wiring in vehicle shall be fully insulated so as to prevent the danger of short-circuiting and at least two fire extinguishers of carbon dioxide type shall be carried. The vehicle shall be properly marked indicating adequate warning to the public in regard to the nature of cargo.
- j. No metals except approved metal truck shall be allowed to come in contact with cases of explosives, metal, flammable, or corrosive substance shall not be transported with explosives. As far as possible, transportation of any material along with explosives shall be prohibited.
- k. Smoking shall be prohibited in the vehicle carrying explosives.
- l. No unauthorized person shall be allowed in the vehicle, carrying explosives.
- m. Loading and unloading of explosives shall be done carefully.
- n. Explosives and detonators or blasting caps shall not be permitted to be transported in the same vehicle.
- o. Detonators and other explosives for blasting shall be transported to the site of work in the original containers or in securely locked separate non-metallic containers and shall not be carried loose or mixed with other materials.

10.3. STORAGE OF EXPLOSIVES AND BLASTING AGENTS

- a. Explosives and related materials shall be stored in approved facilities.
- b. Blasting caps, electric blasting caps, detonating primers, and primed cartridges shall not be stored in the same magazine with other explosives or blasting agents.
- c. Smoking and open flames shall not be permitted within 50 feet of explosives and detonators storage magazine.
- d. No Explosives or blasting agents shall be permanently stored in any underground area until the area has been developed to the point where at least two modes of exit have been provided.
- e. Permanent underground storage magazine shall be at least 300 feet from any shaft or other active underground working area.
- f. Permanent underground magazines containing detonators shall not be located closer than 50 feet to any magazine containing other explosives or blasting agents.

10.4. DRILLING AND LOADING

- a. Before planning out the drilling operations for blasting purposes, nature of stratum and the overburden shall necessarily be examined to avoid possibilities of landslides after blasting.
- b. The face or rock shall be carefully examined before drilling to determine the presence of unfired explosives. No attempt shall be made to drill at a site if un-detonated explosives are suspected. In such case the boreholes shall be thoroughly cleaned before a cartridge is

- inserted. Wooden tamping rods (not pointed, but cylindrical throughout) shall be used in the charging the holes. The cartridge will be on the top.
- c. The borehole shall be carefully checked for length, presence of water dust, etc. with a wooden temping pole or a measuring tape before loading.
 - d. Surplus explosives shall not be stacked near working areas during loading/unloading.
 - e. The line of detonating fuse extending into a borehole shall be cut from the spool before loading the remainder of the charge.
 - f. A bore shall not be loaded with explosives after springing (enlarging the hole with explosives) or upon completion of drilling without making sure it is cool and it does not contain any hot smoldering material. Temperatures in excess of 65° C are dangerous.
 - g. A bore near another hole loaded with explosives shall not be sprung.
 - h. No force shall be used for inserting cartridges or any explosives into a bore hold or pass any obstruction in a borehole.
 - i. No force shall be used for inserting a blasting cap or an electric blasting cap into explosive. The cap shall be inserted into a hole made with a pickers designed for the purpose. A hitch of the electric blasting cap leading wire shall be made on the primer cartridge so as to prevent pulling out the electric blasting cap from the explosive charge. In case of fuse, the fuse shall be tied to the explosive cartridge so that the blasting cap is not pulled out. Care shall be taken so that the blasting cap is not pulled out. Care shall be taken so that the electric blasting cap, leading wire or the length of the fuse does not get damaged during loading of the charge.
 - j. No attempt shall be made to slit, drop, deform or abuse the primer.
 - k. Blasting caps or electric blasting caps shall not be connected to detonating fuse except by methods recommended by the manufacturers of caps.
 - l. Explosive cartridge shall not be cut, nor explosive removed from the cartridge for use.
 - m. Metallic devices of any kind shall not be used in tamping. Wooden tamping tools with not exposed metal parts except non-sparking metal connectors for jointed poled shall be used. Violent tamping shall be avoided. Primer shall not be tamped.
 - n. Care shall be taken to confine the explosives in the bore hold with sand, earth clay or other suitable combustible stemming material.
 - o. Kinking or injuring of fuse or electric blasting cap wires shall be avoided when tamping.

10.5. ELECTRICAL SHOT-FIRING CIRCUIT

- a. In deciding the sizes of wires, fuses, circuits, blasting switches, etc., instructions issued by the manufacturers of these articles shall be followed, if they do not contradict with Indian Explosives Act or framed under it.
- b. No person shall attempt to uncoil the wires and open out the short-circuited bare leading wires of the electric blasting cap during approach of dust storm or near any source of large

charge of static electricity or near a radio transmitter. The manufacturer of the cap or the Inspectorate of Explosives shall be consulted regarding the distance from the transmitter beyond which electric short firing shall be conducted.

- c. Firing circuit shall be kept completely insulated from the ground of the other conductors, such as wires, rails, pipes or other paths or stray current.
- d. There shall not be any electric live wires or cables of any kind near electric blasting caps or other explosives except at the time and for the purpose of firing the blast.
- e. All electric blasting caps shall be tested singly and also when connected in a circuit in series using only an approved type of circuit continuity tester or ohmmeter.
- f. No attempt shall be made to use in the same circuit either electrical blasting caps made by more than one manufacturer or electric blasting caps of different design or function even if made by the same manufacturers unless such use is approved by the manufacturers.
- g. No attempt shall be made to fire a circuit of electric blasting caps with less than the minimum current specified by the manufacturer of that electric blasting cap.
- h. Care shall be taken to ensure that all wire ends to be connected are bright and clean.
- i. The electric cap wires or leading wires shall be kept short circuited until ready to fire.
- j. When energy for blasting is taken from power circuits the voltage shall not exceed 220v. The wiring controlling arrangements shall conform to the following:
- k. The blasting switch shall be strictly according to the specifications, externally operated double-throw switch, which when locked in the open position will short circuit and ground the leading wires. The switch shall be installed at the location where the firing is to be controlled.
- l. A 'safety' switch of the same type as the blasting switch shall be installed between the blasting switch and the firing circuit and lead lines, at a distance not to exceed 180cm from the blasting switch.
- m. Both the safety switch and the blasting switch shall be locked in the open position immediately after the shot and before any person is permitted to return to the blasting area. Key to the switches shall remain in the possession of the blaster at all times.
- n. Rubber covered or other adequately insulated copper wires in good condition shall be used for firing lines and shall have solid cores of appropriate gauge. Sufficient firing line shall be provided to permit the blaster to be located at a safe distance from the blast. Single conductor lead lines shall be used.
- o. Blasting operations in the proximity of overhead power lines, communication lines, utility lines, or other structures shall not be carried on until the operator or the owner, or both of such lines as been notified and precautionary measures deemed necessary, have been taken.
- p. All holes loaded on a shift shall be fired on the same shift.
- q. As far as possible, blasting shall be carried out using suitable exploder with 25 per cent excess capacity. Electric power from the mains shall be used only when it is absolutely necessary.

10.6. SHOT-FIRING WITH SAFETY FUSE

- a. The fuse shall be carefully handled to avoid damaging the covering. In very cold weather the fuse shall be slightly warmed before using so as to avoid cracking the waterproofing.
- b. Short fuse shall not be used. The length of a fuse shall not be less than 120cm. The rate of burning of the fuse shall be known and it would be necessary to make sure that it will take sufficient time in burning so as to enable all persons to reach a place of safety. The burning rate of the fuse shall not be more than 60 cm/min.
- c. The fuse shall not be cut until the operation to insert the fuse into a blasting cap is ready. The fuse shall be cut off about 2.5 to 5 cm to ensure a dry end. It shall be cut squarely across with a clean and sharp blade. The fuse shall be seated lightly against the cap charge and care shall be taken to avoid twisting after it has been placed in position.
- d. Blasting caps shall not be crimped by any means except by a cap crimper designed for the purpose. It shall be necessary to make sure that the cap is squarely crimped to the face.
- e. The fuse shall be lighted with a fuse lighter designed for the purpose. If a match is used, the fuse shall be slit at the end and the match head held in then slit against the power core and then the match head rubbed against an abrasive surface to light the fuse.
- f. The fuse shall not be lighted until sufficient stemming has been placed over the explosives to prevent sparks of live match heads from coming into contact with the explosives.
- g. The explosives shall not be held in hands when lighting the fuse.

10.7. UNDERGROUND WORK

- a. Only permissible explosives and in the manner as specified by the appropriate authority shall be used.
- b. Excessive quantities of explosives shall not be taken underground at any time. Black blasting powder or pellet powder shall not be used with any other explosive in the same borehole.

10.8. BEFORE AND AFTER FIRING

- a. Before firing, sufficient warning shall be given to enable the people working in the area to get off the danger zone. The danger zone shall be suitable cordoned off and flag men posted at important points.
- b. No loose materials, such as tools, drilling implements etc. Shall be left on the rock surfaces to be blasted.
- c. Blasting in the open shall be carried out during the fixed hours every day or on fixed days in the week. This information shall be amply publicized and the following precautions observed:
- d. On the project sites, where blasting operations are carried out, daily blasting hours shall be clearly printed on the sign-boards on all the roads approaching that area.
 - i. Road closing barriers should be provided to close the traffic on these roads, at least 400 meters away when the firing is to take place.

- ii. The beginning of the firing shall follow loud sirens and similarly loud sirens shall succeed the completion of the firing.
- e. The shot-firer shall not be allowed to return to the blasting site after firing, until at least 5 min have elapsed. In case of electric shot firing, the shot holes shall be examined after firing and in case of misfire no person shall be allowed to approach the blasting site for at least 5 min. In case of shot firing with safety fuse, utmost care shall be taken to count the number to ensure that all the shots have fired and in the event of misfire, no person shall be allowed to approach the blasting site for at least 30 min. In any case, a careful inspection for the remaining un-detonated explosive shall be made after firing the shots. All misfired shot holes shall be cross-marked. No other person than those duly authorized shall approach the holes until one of the following operations has been performed in respect of each of the misfired holes:
 - f. If the misfire is due to a faulty cable or faulty electrical connection the defect shall be remedied and the shot fired.
 - g. The stemming shall be floated out by use of water or air jet from hose until the hole has been opened to within 60 cm of the charge, whereupon water will be siphoned or pumped out, then a fresh new charge placed and duly detonated. Or
 - i. A careful search shall be made of unexploded material in the debris of the charge.
 - ii. If a shift charge is unavoidable, the person in-charge of one shift before leaving the work shall inform the person relieving him for the next shift of any cases misfired and shall point out their position duly cross marked and also state clearly what action has to be taken in the matter.

Note: The rules are made considering statutory provisions and other National/International standards. However, if any statutory provision overruling these laws is made, the statutory provisions shall overrule the NTPC Rules.

11.0 SAFETY IN EXCAVATION & TUNNELING WORK

SAFETY IN EXCAVATION

11.1 GENERAL PROVISIONS

- a. Before undertaking any activity, the soil shall be tested and in case of availability of any explosive gas, necessary arrangements must be made to remove/dilute such gases and in case they are found to be toxic or poisonous, the workplace must be purged and continuous ventilation maintaining the contamination below the permissible level ensured;
- b. The position of underground installations such as sewers, water pipes and electrical cables shall be verified and in case of their existence, they must be isolated;
- c. If they cannot be isolated or removed or shutdown, they shall be fenced, hung up or otherwise protected. On every part likely to be visited by persons or where transport vehicles ply, the area shall be suitably fenced, guarded or barricaded to prevent fall of persons, vehicles or livestock into the excavated area;
- d. Warning signs shall be erected and the in the night hours the area shall be illuminated to warn pedestrians and vehicular traffic;
- e. Arrangements shall be made to prevent external vibrations due to rail/road traffic;
- f. Blasting shall be carried out in accordance with the norms applicable in this regard. Special care shall be taken to control the impact of vibrations/tremor caused by blasting to protect excavations from cave-ins;
- g. Arrangements shall be made to save other buildings/structures in the affected zone or in the vicinity of the area of excavation, from collapse;

11.2 SHORING AND TIMBERING

- a. Site of excavations, where workers are exposed to danger from moving ground, shall be made safe by maintaining due slope not exceeding the angle of repose of different types of soil or otherwise by shoring, portable shields or other effective means;
- b. All trenches in the soil, other than rock or hard compact soil more than 1.5 m deep into which men enter, shall be securely shored and timbered under the supervision of a competent person and only the trained workers shall be allowed to substantially alter or dismantle the shoring or timbering;
- c. All struts, braces and walls in excavation shall be adequately secured so as to prevent their accidental displacement;
- d. In all excavations in soft or fissured rock or hard soil exceeding 2 m in depth, except those which are sloped to within 1.5 m of the bottom into which men enter, shall be securely shored and timbered;
- e. Where the sides of the excavations are sloped as outlined above, but not within the 1.5 m of the bottom, vertical sides shall be shored and the shoring shall extend at least 30 cm above the vertical sides. When open spaced sheathing is used, a toe-board shall be provided to prevent material rolling down the slope and falling into the excavated.

11.3. SHEATHING

- a. The sheathing should be placed against the side of the trench so that length of each piece of sheathing is vertical. It should be held securely in place against the wales by ensuring that sheathing is kept firmly pressed against the wall of the trench. Where the trench excavated is loose, sandy or soft soil or soil which has been previously excavated or soil which is under hydrostatic pressure, each piece of sheathing shall be driven into the bottom of the trench so as to firmly hold it in place;
- b. Where two or more pieces of sheathing are used one above another, the sheathing shall be so arranged that the lower pieces of sheathing shall overlap the lowest wales supporting the piece of sheathing next above it. These pieces of sheathing shall be firmly driven into the soil and securely supported by wales and struts, as the trench is made deeper.

11.4. WALES

- a. The wales shall be parallel to the bottom or the proposed bottom of the trench. Each wale shall be supported on cleats spiked to the sheathing or by posts set on the wales next below it and in the case of the lowest wale on the bottom of the trench itself. Where necessary, wedges may be provided between a wale and the sheathing it supports so that roughly uniformity is given to all individual pieces of sheathing.

11.5. STRUTS

- a. Struts shall be horizontal and at right angles to the wales or sheathing supported thereby. Struts shall be cut to the proper length required to fit in tightly between the wales. Where necessary, the struts shall be held securely in place by wedges, driven between the struts and the wales;
- b. Struts shall be placed on cleats spiked or bolted to the posts supporting the Wales.

11.6. LOOSE SITE MATERIALS:

No loose material shall be kept very close to the excavation creating possibility of its fall into the excavated area. A safe distance of at least 1 m shall be maintained.

11.7. PLANT & MACHINERY:

Movement of vehicles and heavy equipment shall be kept at a distance least equal to the depth of the excavation or at least 6 m for excavation deeper than 6 m and the workers shall be provided with proper tools.

11.8. MEANS OF ACCESS

- a. For trenches deeper than 1.5 m, safe means of access and egress shall be provided at intervals of every 15 m. Where it is not possible to provide safe means of access and egress as above, ladders shall extend from the bottom of the trench to at least 90 cm above the ground;
- b. Walkways, runways and sidewalks shall be kept clear of excavated materials or other obstructions and no side walls shall be undermined-undercut unless it is capable of carrying a minimum live load of 125 lbs per square feet;

- c. If planks are used for raising walkways, runways or sidewalks, they should be parallel to the length of the walk and fastened together against displacement;
- d. Lone worker shall not be allowed to work in the excavated area.

11.9. INSPECTIONS:

A competent person shall make inspections every day and necessary measures shall be taken to safeguard against possible cave-ins or slide or collapse of the excavations.

11.10. NOTIFICATION OF INTENTION TO CARRY OUT EXCAVATION AND TUNNELING WORK

- a. Within thirty days, prior to the commencement of such excavation or tunneling work, the contractor shall inform in writing the detailed layout plans, method of construction and schedule of such excavation or tunneling work to the Engineer in-charge of NTPC;
- b. In case compressed air is used in such excavation or tunneling work or any work incidental to or required for such excavation or tunneling work, the technical details and drawings of all man-locks and medical-locks together with names and addresses of all construction medical officers duly qualified and so appointed by such contractor for the purpose of such excavation or tunneling work shall be sent to the Engineer in-charge.

11.11. PROJECT ENGINEER

- a. The contractor undertaking any excavation or tunneling work shall appoint a Project Engineer for safe operation of such projects;
- b. Such Project Engineer shall exercise overall control of the operations and the activities at such project and be responsible for carrying out the activities safely.

11.12. RESPONSIBLE PERSON

- a. The contractor undertaking excavation or tunneling work at construction site of a building or other construction work shall appoint a responsible person for safe operation of such excavation or tunneling work;
- b. The name and addresses of such responsible persons shall be forwarded to the Engineer in-charge;
- c. Duties and responsibilities of the responsible person referred to above person shall include
 - i. To carry out smoothly such excavation or tunneling work;
 - ii. To inspect and rectify any hazardous situation relating to such excavation or tunneling work;
 - iii. To take remedial measures to avoid any unsafe practice or conditions relating to such excavation or tunneling work.

11.13. WARNING SIGNS AND NOTICES

- a. Suitable warning signs or notices, required for the safety of building workers carrying out the work of an excavation or tunneling, shall be displayed or erected at conspicuous places in Hindi

and in language understood by the majority of such building workers at such excavation or tunneling work;

- b. Such warning signs and notices with regard to compressed air working shall include:
 - i) The danger involved in such compressed air work;
 - ii) Fire and explosion hazards;
 - iii) The emergency procedures for rescue from such danger or hazards.

11.14. REGISTER OF EMPLOYMENT

- a. The contractor shall ensure that at a construction site of a building or other construction work where an excavation or tunneling work is being carried on, a register of employment of building workers carrying out such excavation or tunneling work is maintained and produced on demand;
- b. Periods of work of such excavation or tunneling work shall be maintained in a register on day-to-day basis and such register shall be produced on demand

11.15. ILLUMINATION

- a. All contractors carrying out excavation or tunneling work at a construction site of a building or other construction work shall provide for emergency generators on such construction site to ensure adequate illumination at all work places where such excavation or tunneling work is being carried out;
- b. In case of power failure, all workplaces where excavation or tunneling works are carried out shall be adequately illuminated

11.16. PNEUMATIC TOOLS:

Supply lines to pneumatic tools used within a tunnel are fitted with water trap or safety chain or safety wire, as the case may be.

11.17. STABILITY OF STRUCTURE DURING GENERAL EXCAVATION & TUNNELING:

The contractor shall ensure that where there is any doubt as to the stability of any structure adjoining the workplace or other areas to be excavated or where tunneling work is to be carried out –

- a. The Project Engineer shall arrange for measures like underpinning, sheet piling, shoring, bracing or other similar means to support such structure and to prevent injury to any building worker working adjacent to such structure or damage to property or equipment adjacent to such structure;
- b. Where any building worker engaged in excavation is exposed to hazard of falling or sliding material or article from any bank or side of such excavation which is more than 1.5 m above his footing, such worker shall be protected by adequate piling and bracing against such bank or side;

- c. The excavation and its vicinity shall be checked by a responsible person after every rain, storm or other occurrences carrying hazards and in case a hazard is noticed at such checking, adequate protection against slides and cave-in to prevent such hazard shall be provided;
- d. Temporary sheet piling installed for the construction of a retaining wall after excavation shall not be removed, except on the advice of the responsible person after an inspection carried out by such responsible person;
- e. Where banks of an excavation are undercut, adequate shoring shall be provided to support the material or article overhanging such bank;
- f. Excavated material shall not be stored at least 0.5 m from the edge of an open excavation or trench and the banks of such excavation or trench shall be stripped of loose rocks and other materials which may slide, roll or fall upon a building worker working below such bank;
- g. Adequate and suitable warning signs shall be put-up at conspicuous places at the excavation work to avoid any person falling into the excavations or trenches;
- h. The responsible person shall ensure at the excavation that no building worker is permitted to work where such building worker may be struck or endangered by the excavation machinery or material or article used in such excavation.

11.18. SAFE ACCESS AND EGRESS:

Ladders, staircases or ramps are provided, as the case may be, for safe access to and egress from excavation where the depth of such excavation exceeds one point 1.5 m and such ladders, staircases or ramps comply with the relevant national standards.

11.19. TRENCHES

- a. A trench or excavation shall be protected against falling of a person by suitable measures if the depth of such trench or excavation exceeds 1.5 m and such protection shall be an improved protection in accordance with the design and drawing of a Professional Engineer, where such depth exceeds 4 m;
- b. Where the depth of a trench requires two lengths of sheet piling, one above the other, the lower piling shall be set inside the bottom strings or wales of the upper piling and such sheet piling shall be driven down and braced as the excavation continues;
- c. All metal sheet piles used in excavation or a trench shall be welded end-to-end and secured by other similar means.

11.20. POSITIONING AND USE OF MACHINERY:

Any machinery used in excavation and tunneling work shall be positioned and operated in such a way that such machinery will not endanger the operator of such machinery or any other person in the vicinity.

11.21. BREATHING APPARATUS:

Suitable breathing apparatus shall be provided to a building worker while working in compressed air environment for his use at excavation or tunneling work and such breathing apparatus shall be maintained in good working condition at all times.

11.22. SAFETY MEASURES FOR TUNNELING OPERATIONS

- a. Where there is a danger of falling or sliding of material from the roof face or wall of a tunnel, adequate measures such as shoring, supporting by means of rock bolts, segments or steel sets shall be taken for the safety of building workers;
- b. The excavated areas shall be made safe by use of suitably designed and installed steel sets, rock bolts or similar other safe means;
- c. The responsible person shall examine and inspect the workplaces in a tunnel before the commencement of work in such tunnel and at regular intervals thereafter to ensure safety of the building workers in such tunnel;
- d. The portal areas of a tunnel with loose soil or rock, likely to cause injury to a person shall be adequately protected with supports.

11.23. SURROUNDINGS OF A SHAFT

- a. Surroundings of a shaft used in excavation or tunnel work shall be protected from being washed away by construction of sufficient height;
- b. Where a building worker is required to enter a shaft at an excavation or tunneling work, safe means of access shall be provided for such entry;
- c. Every shaft at excavation or tunneling work shall be provided with a steel casing, concrete piping, timber shoring or other materials of adequate strength for the safety of building workers working in such shaft;
- d. Such casing and bracing shall be provided to shafts at an excavation or tunneling work according to the appropriate design for such casing and bracing;
- e. A reinforced concrete raft and beam shall be provided around the opening of a shaft at an excavation or tunneling work if the ground surrounding such opening is unstable or unsafe.

11.24. LIFT FOR SHAFT:

Lift shall be provided for transport of building workers and materials or articles at an excavation or tunneling work required to descend more than 50 m in a shaft.

11.25. MEANS OF COMMUNICATION

Reliable and effective means of communication such as telephone or walkie-talkie shall be provided and maintained in working order for arranging better and effective communication at an excavation or tunneling work at the following locations, namely:

- i. Working chamber of an excavation;
- ii. Intervals of hundred meters along the tunnel;
- iii. Working chamber side of a man lock near the door of such man lock;
- iv. Interior or each chamber of a man lock;
- v. Location conspicuous lock attendant's situation;
- vi. A compressor plant;

- vii. A first-aid station, and
- viii. Outside the portal or the top of a shaft;
- ix. Such number of bells and whistles shall be made available at all times at the locations as are necessary for the safety of persons at such locations.

11.26. SIGNALS:

The standard audio or video signals shall be used in excavation or tunneling work and conspicuously located or displayed near entrance to the workplace and in such other locations as may be necessary to bring such signals to notice of all building workers employed in such excavation or tunneling work.

11.27. CLEARANCES

- a. The minimum lateral clearances of 0.5 m shall be maintained between any part of a vehicle and any fixture or any equipment used in an excavation or tunneling work after allowing the throw or swing of such fixture or equipment;
- b. The overhead clearance for a locomotive drive at excavation or tunneling work shall not be less than 1.20 m above the seat of such driver and not less than 2 m above the platform where such driver stands or of any other dimension in accordance with the approved standard.

11.28. SHELTERS:

The adequate number of shelters for the safeguard of the building workers are provided where, in the course of working, they are liable to be struck by a moving vehicle or other material handling equipment in a tunnel.

11.29. USE OF INTERNAL COMBUSTION ENGINE:

No internal combustion engine shall be used underground in excavation or tunneling work unless such engine is so constructed that the air entering the engine gets cleared before entry and the engine emits no fumes or sparks.

11.30. INFLAMMABLE OILS:

Inflammable oils with the flash point below the working temperature that is likely to be encountered in a tunnel shall not be used in excavation or tunneling work.

11.31. COUPLING AND HOSES:

All high-pressure hydraulic hoses and couplings shall be adequately protected against any possible damage in excavation or tunneling work.

11.32. HOSE INSTALLATION:

All hydraulic lines and plants working at a temperature exceeding 750 c shall be protected by adequate insulation or otherwise against accidental human contact in excavation or tunneling work.

11.33. FIRE RESISTANT HOSES:

No fire hydraulic hoses other than fire resistant hydraulic hoses are used when hydraulically activated machinery and equipment are employed in tunnels.

11.34. FLAMEPROOF EQUIPMENT:

Only flameproof equipment of appropriate type as per approved standards shall be used where there is a danger of flammable or explosive atmosphere being prevalent inside the tunnel.

11.35. STORING OF OIL AND FUEL UNDERGROUND:

All oils, greases or fuels stored underground in excavation or tunneling work shall be kept in tightly sealed containers and in fire resistant areas at safe distances away from explosive and other flammable chemical and appropriate flameproof installation shall be used in such storage areas.

11.36. USE OF GASES UNDERGROUND

- a. Petrol or liquefied petroleum gas or any other flammable substances shall not be used or stored inside the tunnel except with the prior approval of the Project Engineer;
- b. After the use of the petroleum or liquefied petroleum gas, or highly inflammable substances, all remaining petroleum or liquefied petroleum gas or highly inflammable substances shall be removed immediately from such tunnel;
- c. No oxy-acetylene gas shall be used in a compressed air environment in excavation or tunneling work.

11.37. WATER FOR FIRE FIGHTING

- a. Adequate number of water outlets shall be provided on excavation or tunneling work and readily made accessible throughout the tunnel for fire fighting purposes and such water outlets shall be maintained for effective fire fighting;
- b. All air locks shall be equipped with fire fighting facilities at excavation or tunneling work;
- c. An audible fire alarm shall be provided to warn the building workers whenever a fire breaks out on an excavation or tunneling work;
- d. Adequate number and types of fire extinguishers, in accordance with relevant national standards, shall be provided and made readily available to fight any outbreak of fire at an excavation or tunneling work;
- e. Fire extinguishers with vaporizing liquids and high pressure carbon dioxide shall not be used in tunnels or other confined spaces;
- f. The instructions regarding steps to be followed to fight outbreak of fire, at an excavation or tunneling work, written in Hindi or local language understood by the majority of the building workers employed on such excavation or tunneling work, shall be displayed at conspicuous and vulnerable places of such excavation or tunneling work.

11.38. FLOODING

- a. Water tight bulkhead doors shall be installed at the entrance of a tunnel to prevent flooding during a tunneling work where more than one tunnel is driven from a shaft;
- b. All necessary measures shall be taken to ensure that no building worker is trapped in any isolated section of a tunnel when any bulkhead door of such tunnel is closed;
- c. Where there is likelihood of flooding or water rushing into a tunnel during a tunneling work, arrangements shall be made for immediate starting of water pumps to take out water of such flooding or water rushing and for giving alert signals to the building workers and other persons to keep them away from danger.
- d. Airtight steel curtains shall be provided in areas liable to flooding at tunneling work and in case of descending tunnels, such curtains shall be provided in the top half of such tunnels to ensure the retention of pockets of air for rescue purpose.

11.39. REST SHELTERS

- a. Where building workers employed in a compressed air environment in a tunneling work are required to remain at the work site for one hour or more after de-compression from pressure exceeding one bar, adequate and suitable facilities shall be provided for such building workers to rest;
 - a. Every man-lock, medical-lock and any other facility inside these locks in a tunneling work shall be maintained in a clean state and in good repairs;
 - b. A first-aid room shall be provided and readily available at a construction site of a tunneling work;
 - c. Each man-lock attendant at the station shall be provided with a first-aid box.

11.40. PERMISSIBLE LIMIT OF EXPOSURE OF CHEMICALS

- a. The working environment in a tunnel or a shaft in which building workers are employed shall not contain any of the hazardous substances in concentrations beyond the permissible limits;
- b. The responsible person referred to shall conduct necessary test before the commencement of a tunneling work for the day and at suitable intervals as fixed by the Engineer in-charge, to ensure that the permissible limits of exposure are not exceeded and a record of such test shall be maintained and made available for inspection.

11.41. VENTILATION:

All working areas in a free air tunnel shall be provided with the approved ventilation system and the fresh air supplied in such tunnel shall not be less than 6 m³ per minute for each building worker employed underground in such tunnel and the free air-flow movement inside such tunnel not less than 9 m³ per minute.

11.42. AIR SUPPLY INTAKE POINT:

The air intake points for all air compression shall be located at places where such intake air does not get contaminated with dust, fumes, vapor and exhaust gases or other contaminants.

11.43. EMERGENCY GENERATORS

- a. Every compressed air system in a tunnel shall be provided with emergency power supply system for maintaining continued supply of compressed air in such compressed air system, which shall be capable of operating air compressor and ancillary systems of such compressed air system;
- b. The emergency power supply system shall be maintained and made readily available at all times.

11.45. AIR MAINS:

Every air-main supplying air to the working chamber, man-lock or medical-lock used at an excavation or tunneling work shall be protected against accidental damage and where it is not practicable to provide such protection, a stand-by air-main shall be provided.

11.46. BULKHEAD AND AIR LOCKS

- a. A bulk head or air tight diaphragms retaining compressed air, when used within a tunnel or a shaft, shall be constructed to withstand the maximum pressure at 1.25 the maximum working pressure of such bulk head or diaphragm and such bulk head or diaphragm shall be tested before its each use by a responsible person to ensure that such bulk head or diaphragm is in proper working order;
- b. Such responsible person shall keep the record of each test and such record shall be produced for inspection.
- c. The bulk head or diaphragm shall be made of sound material of adequate strength, which shall be able to withstand the maximum pressure on which they are subjected to at any time of their use;
- d. A bulkhead anchorage and air lock shall be tested at its work place at an excavation or tunneling work immediately after their installation at such place.

11.47. DIAPHRAGM:

All diaphragms, which are in the form of horizontal decks across a shaft used at excavation or tunneling work, shall be securely anchored

11.48. PORTABLE ELECTRICAL HAND TOOLS:

All portable electrical hand tools and inspection lamps used underground or in a confined space shall be operated at a voltage not exceeding 24 V.

11.49. CIRCUIT BREAKER

- a. Adequate numbers of differential ground fault circuit breakers shall be installed for every electrical distribution system and its sub-systems used at an excavation or tunneling;
- b. Work and the sensitivity of each of circuit breaker shall be adjusted in accordance with the requirement set out in accordance with the approved standards;
- c. No semi-enclosed fuse unit shall be used in underground place.

11.50. TRANSFORMER:

The contractor shall ensure no transformer is used in any section of a tunnel under compressed air unless such transformer is of the dry type and conforms to the approved standards.

11.51. LIVE WIRES:

There shall be no exposed live wire in working areas at an excavation or tunneling work which are accessible to building workers other than those authorized to work on such live lines.

11.52. WELDING SETS:

All welding sets used in a tunnel shall be of adequate capacity and of suitable type, duly approved.

11.53. QUALITY AND QUANTITY

- a. Every working chamber at an excavation or tunneling work where compressed air is used, the supply of such air shall be maintained at not less than 0.3 m³ per minute per person working therein;
- b. A reserve supply of compressed air shall be made available at all times for man-locks and medical locks used at a tunneling work;
- c. The air supplied in a compressed air environment at a tunneling work shall be, as far as practicable, free from contaminants, namely, dust, fumes and other toxic substances.

11.54. WORKING TEMPERATURE:

The temperature in any working chamber at an excavation or tunneling work where building workers are employed shall not exceed 29° c and the arrangement shall be maintained for keeping records in which the temperatures measured by dry bulb and wet bulb inside such working chamber once in every hour and for producing such records for inspection on demand.

11.55. MAN-LOCKS AND WORKING IN COMPRESSED AIR ENVIRONMENT

- a. Man-locks used at a tunneling work shall be of adequate strength, made of sound material and designed to withstand any pressure, internal or external, to which it may be subjected in the normal use or in an emergency;
- b. Doors of man-locks at an excavation or tunneling work shall be made of steel and used at a tunneling work for keeping the work airtight and devices shall be provided for sealing the doors when such locks are under pressure. The anchorage of a man-lock used at tunneling work shall have adequate strength to withstand the pressure exerted by air on the man-lock. There shall be adequate room available for the workers for working in the man-locks;
- c. Where work is carried out in any compressed air tunnel, a Man-lock in accordance with the approved standards shall be used;
- d. Where a man-lock is used, safety Instructions in Hindi and in local language understood by majority of building workers employed there, shall be displayed at conspicuous places;
- e. Except in an emergency, compression and de-compression operations shall be carried out in a man-lock and in an emergency any material-lock may be used;
- f. A record of compression and de-compression shall be kept in writing and produced for inspection on demand;
- g. Material lock shall be used with the permission of the Engineer in-charge where it is impracticable to install both the man-lock and the material-lock at;
- h. The man-lock at tunneling work shall not be used for any purpose

- i. other than compression or de-compression of building workers;
- j. No de-canting of building workers at tunneling work shall be carried
- k. out without prior approval of the Engineer in-charge except in an emergency;
- l. In case a building worker collapses or is taken ill during his de-compression in a man-lock, the lock attendant of such man-lock shall raise the pressure to a level equal to the maximum pressure which that building worker was exposed to in the working chamber prior to such de-compression and such lock attendant shall immediately report the matter relating to such collapse to the medical lock attendant and medical officer on duty;
- m. A building worker who had previously received training with a trained building worker to work in a compressed air environment at tunneling work shall be employed to work independently in such a compressed air environment;
- n. A building worker who had undergone three de-compressions from a pressure exceeding one bar in a period of eight hours at tunneling work shall not be allowed to enter a compressed air environment except for the purpose of carrying out rescue work;
- o. A building worker employed in a compressed air environment for a period of eight hours in a day at tunneling work shall not be employed again in such environment unless he has spent not less than twelve consecutive hours of rest at atmospheric pressure;
- p. No building worker shall be engaged in a compressed air environment at a pressure, which exceeds three bars at a tunneling work unless prior permission, in writing, has been obtained from the Engineer in-charge;
- q. No building worker shall be employed in a compressed air environment for more than fourteen consecutive days in a month;
- r. A register of employment of all building workers in compressed air environment shall be maintained;
- s. An identification badge shall be supplied to a building worker employed in compressed air environment;
- t. The badge of a building worker shall contain particulars of his name, location of the medical-lock allotted to him for work, the telephone number of the Construction Medical Officer concerned for his treatment and the instructions in case of his illness of unknown and doubtful causes;
- u. Record of all identification badges supplied to building shall be kept in a register;
- v. Every building worker whose name appears in the register shall wear the badge supplied to him at all times during his duty hours;
- w. Suitable warning signs shall be displayed in the compressed air for the prohibition of the following, namely:
 - i) Use of alcoholic drinks;
 - ii) Use and carrying of lighters, matches or other sources of ignition;
 - iii) Smoking; and

- iv) No entry to person who has consumed alcoholic drink

11.56.SAFETY INSTRUCTION:

All building workers employed in compressed air environment at tunneling work shall follow the instructions issued for their safety in the course of such employment.

11.57.MEDICAL-LOCK

- a. A suitably constructed medical lock shall be maintained at tunneling work where building workers are employed in a working chamber at a pressure exceeding one bar;
- b. Where more than one hundred building workers are employed in a compressed air working environment exceeding one bar at tunneling work, one medical-lock is provided for every one hundred building workers or part thereof and such medical lock shall be situated as near as possible to the main-lock used at such tunneling work.

12.0. SAFETY IN PILING WORK

12.1. GENERAL PROVISIONS

- a. All pile driving equipment shall be of good design and sound construction, taking into account the ergonomic principles and properly maintained;
- b. A pile driver shall be firmly supported on a heavy timber sill, concrete bed or other secured foundation;
- c. In case a pile driver is required to be erected in dangerous proximity to an electrical conductor, all necessary precautions shall be taken to ensure safety;
- d. The hoses of steam and air hammer shall be securely lashed to such hammer so as to prevent them from whipping in case of connection or break;
- e. Adequate precaution shall be taken to prevent the pile driver from over turning and hammer from missing the pile;
- f. A responsible person for inspecting pile-driving equipment shall inspect such equipment before taking it into use and takes all appropriate measures as required for the safety of building workers before commencing piling work by such equipment;
- g. Where there is any question of stability of a structure for its adjoining areas to be piled, such structure shall be supported, where necessary, by underpinning, sheet piling, shoring, and bracing or by other means to ensure safety and stability of such structure and to prevent injury to any person.

12.2. PROTECTION OF OPERATOR:

The operator of every pile driving equipment shall be protected from falling objects, steam, cinders or water by substantially covering or otherwise or by other means.

12.3. INSTRUCTION TO AND SUPERVISION OF BUILDING WORKERS WORKING ON PILE-DRIVING EQUIPMENT:

Every building worker working on a pile driving equipment shall be given instructions regarding safe work procedure to be followed in piling operation and shall be supervised by a responsible person throughout such work.

12.4. ENTRY OF UNAUTHORIZED PERSON:

The contractor shall ensure at a construction site of a buildings or other construction work that all piling areas where pile-driving equipment is in use are effectively cordoned off to prevent entry of unauthorized persons.

12.5. INSPECTION AND MAINTENANCE OF PILE DRIVING EQUIPMENT

- a. Pile-driving equipment shall not be taken into use until it has been inspected by a responsible person and found to be safe for such use;
- b. A responsible person for such inspection at suitable intervals to ensure safety to the building worker working on such equipment shall inspect pile driving equipment in use;

- c. All pile lines and pulley blocks shall be inspected by a responsible person before the beginning of each shift of piling operations.

12.6. OPERATION OF PILE-DRIVING EQUIPMENT

- a. Only experienced and trained building worker shall operate pile driving so as to avoid any probable danger from such operation;
- b. Pile-driving operations shall be governed generally prevalent and accepted signals so as to prevent any probable danger from such operations;
- c. Every building worker employed in pile driving operation or in the vicinity of such pile driving operation shall wear ear protection and safety helmet or hardhat and safety shoes;
- d. Piles shall be prepared at a distance, at least equal to twice the length of the longest pile, from the place of pile-driving operations;
- e. When a pile driver is not in use, the hammer of such pile driver shall be blocked at the bottom of the heads of such pile driver.

12.7. WORKING PLATFORM ON PILING FRAMES:

Where a structural tower supports the lead of a pile driver, leads at which it is necessary for the building workers to work and such platforms except on the hammer of such pile driver or lead sides of such platform and where such platforms cannot be provided with such railing and toe boards, a safety belt shall be provided to each such building worker.

12.8. PILE TESTING

- a. The testing of pile shall be conducted under the supervision of a responsible person for such testing;
- b. All practicable measures like displaying of warning notices, barricading the area and other similar measures shall be taken to protect the area where the pile testing is carried out;
- c. Entry to a pile testing area shall be prohibited to general public to ensure safety.

12.9. PILING, SHORING AND BRACING

- a. Planks used for sheet piling in excavation or tunneling work shall be of sound material with adequate strength;
- b. Shores and braces used in excavation or tunneling work shall be of adequate dimensions and so placed as to be effective for their intended purposes;
- c. Earth supported shores or braces used in excavation or tunneling work shall bear against a footing of sufficient area and stability to prevent the shifting of such shores or braces.

13.0. SAFETY IN THE ERECTION, USE AND DISMANTLING OF SCAFFOLDS

13.1. SCAFFOLD CONSTRUCTION

- a. Every scaffold and every component thereof shall be of adequate construction, made of sound material and free from defects and safe for the purposes for which it is intended for use;
- b. In case bamboo is used for scaffolding, such bamboo shall be of suitable quality, good condition, free from protruding knots and stripped off to avoid any injury to building workers during handling such bamboo;
- c. All metal scaffolds used in building or other construction work shall conform to the approved standards;

13.2. SUPERVISION BY A RESPONSIBLE PERSON: No scaffold shall be erected, added, altered or dismantled except under the supervision of a responsible person.

13.3. Maintenance

- a. The scaffold used in building or other construction work shall be maintained in good repairs and the measures taken against its accidental displacement or any other hazard;
- b. No scaffold or part thereof shall be partly dismantled and allowed to remain in such a condition unless –
 - i) The stability or safety of the remaining portion of such scaffold has been ensured by a responsible person for the safety of such scaffolds;
 - ii) In case the remaining part of such scaffold cannot be used by the building workers, necessary warning notice written in Hindi and in a language understood by the majority of the building workers that such scaffold is unfit for use, shall be displayed at the place where such scaffold is erected.

13.4. STANDARDS, LEDGERS, PUTLOGS

- a. Standards of a scaffold shall be plumb, where practicable, fixed sufficiently close together to secure the stability of such scaffold having regard to all the possible working situations and conditions for the intended use of such scaffold, spaced, as close as practicable, to ensure safety and stability of such scaffold;
- b. Adequate measures are taken to, prevent displacement of a standard of a scaffold either by providing sole plate or a base plate, as necessary;
- c. Ledgers of metal scaffold are placed at vertical intervals with due regard to safety and stability of such scaffold;
- d. Bamboo ledgers are kept as nearly as possible and are placed and fastened to the standards of a scaffold with due regard to the stability of such scaffold.

13.5. WORKING PLATFORM

- a. Working platform shall be provided around the face or edge of a building adjoining at every upper most permanent floor of such building under construction and at any level where construction work of such building is carried out;
- b. A platform shall be designed to suit the number of building workers to be employed on each bay of a scaffold work on such platform and the materials or articles and tools to be carried with them in such bay;
- c. The safe working load and the number of building workers to be employed in each bay of a scaffold shall be displayed for the information of all the building workers employed at such construction site.

13.6. BOARD, PLANK AND DECKING

- a. Board, plank and decking used in the construction of a working platform shall be of uniform size and strength and shall be capable of supporting the load and number of building workers keeping in view the safety of such building workers;
- b. Metal decking, which forms part of a working platform, shall be provided with non-skid surface;
- c. No board or plank which forms the working platform shall be projected beyond its end support unless it is effectively prevented from tripping or lifting and board, plank or decking shall be fastened and secured;
- d. At any one time, not more than two working platforms per bay, shall be used to support building workers or materials or articles at such bay;
- e. Adequate measures shall be taken to prevent injury which may be caused by falling material and objects by using safety nets or other suitable means;
- f. Concrete, other debris or materials shall not be allowed to accumulate at any platform on a scaffold;
- g. Where a work is to be done at the end of a wall, working platform at such workplace shall be faced or, wherever practicable, at least 0.6 m beyond the end of such wall.

13.7. REPAIR OF DAMAGED SCAFFOLD

- a. No building worker shall be permitted to work on a scaffold that has been damaged or weakened unless adequate safety measures have been taken to ensure the safety of such building worker;
- b. Necessary warning signs shall be displayed at such places where repairs of scaffold are undertaken.

13.8. OPENING

- a. There shall be no opening in any working platform except for allowing access to such working platform;
- b. Wherever opening on a platform is unavoidable, necessary measures for protection against falling of objects or building workers from such platform shall be taken by providing suitable safety nets, belts or any other similar means;
- c. Access from one working platform to another platform on a scaffold, if required, shall be provided with suitable and safe ladder for the use of building workers working on such platforms;

- d. Every opening or shaft in the floor shall be provided with suitable means to protect the fall of a person or material by providing suitable fencing or railing of height not less than 900 mm.

13.9. GUARDRAILS: Every side of a working platform from which a person is liable to fall shall be provided with suitable and safe guardrails and toe board of adequate strength to prevent fall of any building worker, material or tools from such platform.

13.10. SCAFFOLD USED BY BUILDING WORKERS OF DIFFERENT EMPLOYERS

- a. Where a scaffold or a part of a scaffold is used, which has previously been used by another employer for his building workers, such scaffold or part thereof shall be used only after its inspection and examination by a responsible person for ensuring that such scaffold or part thereof is safe and fit for such use;
- b. If any rectification, alteration or modification in a scaffold or part thereof, needed to suit its use, shall be made in consultation with the responsible person.

13.11. PROTECTION AGAINST ELECTRIC POWER LINE:

The contractor shall ensure that all necessary and practical measures for protection are taken to prevent any building worker, working on a scaffold, from coming into contact with the electric wires or dangerous equipment.

13.12. SCREENING NET AND WIRE NETS:

Where a scaffold is erected in an area where the construction activities may pose hazards to pedestrians or vehicular traffic nearby from the falling of objects, wire nets or screening nets shall be used to envelope such scaffold.

13.13. TOWER SCAFFOLD

- a. The height of every tower scaffold used in building or other construction work shall not be more than eight times the lesser to the base dimension of such scaffold;
- b. A tower scaffold shall be lashed to a building or a fixed structure before being used by the building workers;
- c. Any tower scaffold which can be moved or castered shall be –
 - i) Constructed with due regard to the stability and, if necessary, adequately weighted at the base;
 - ii) Used only on plain and even surface; and
 - iii) Has casters provided with positive locking devices to hold such scaffold in position;
- d. No building worker shall remain on board scaffold or leave behind tools and material when it is being shifted from one position to another position.

13.14. GEAR FOR SUSPENSION OF SCAFFOLD

- a. Chains, ropes or lifting gears used for suspension of a scaffold shall be of adequate strength, made of sound material and suitable for the purpose of their use and maintained in good repairs;
- b. Chains, wires, ropes or metal tubes used for the suspension of a scaffold shall be:

- i) Properly and securely fastened to every anchorage point and to the scaffold ledgers of other main supporting members used for the support of such scaffold; and
- ii) So positioned as to ensure stability of the scaffold.

13.15. TRESTLE SCAFFOLD AND CANTILEVER SCAFFOLD

- a. No trestle scaffold shall be constructed with more than three tiers or if its working platform is more than 4.5 m above the ground or floor or other surface upon which such scaffold is erected;
- b. Trestle scaffold shall be designed by professional engineer and shall have the approval of the Engineer in-charge before being taken into use.
- c. No trestle scaffold shall be erected on a suspended scaffold;
- d. No cantilever or jib scaffold shall be used unless it is adequately supported, fixed and anchored on opposite side of its support and have out triggers of adequate length and, where necessary sufficiently, supported and braced to ensure safety and stability of such scaffold;
- e. No working platform resting on bearers let into a wall at one end and without other support shall be used unless such bearers are of adequate strength, braced through the wall and securely fastened on the other side.

13.16. SCAFFOLD SUPPORTED BY BUILDING

- a. No part of a building shall be used as support or part of a scaffold unless such part of the building is made of sufficient strength and made of sound material to afford safe support;
- b. Overhanging eaves gutters shall not be used for supporting scaffold;
- c. Suspended scaffold shall be made of in accordance with the approved standards before being used by the building workers.

13.17. USE OF WINCHES AND CLIMBERS FOR SUSPENDED SCAFFOLD

- a. No scaffold shall be raised or lowered by winches or climbers unless such scaffold is made of sound material, adequate strength and has been tested and certified safe for use of winches or climber by a competent person before being taken into use;
- b. All suspended scaffolds counter-balanced by counter weights shall be of approved types before being taken into use for building or other construction work;
- c. The working platform of a suspended scaffold shall be securely fastened to the building or structure as to be safe and to prevent such platform from swing;
- d. The safe working load that a suspended scaffold can carry, shall be displayed where such scaffold is being used

13.18. SAFETY DEVICES FOR SUSPENDED SCAFFOLD

- a. Every suspended scaffold, raised or lowered by the winches or climbers, shall be provided at each of its suspension point with a safety rope with automatic safety device mounted on each of such rope so that such safety rope with such automatic safety device support the platform of such

scaffold in the event of failure of the primary suspension wire ropes, winches, climbers or any part of the mechanism used for raising or lowering such suspended scaffold;

- b. Provided that the clause (a) shall not apply -
 - i) Where the platform of such scaffold is supported at two independent suspension wire rope at or near each end of such platform so that in the event of failure of one of such suspension wire rope, the other wire rope is capable of sustaining the weights of such platform and its load and prevent it from tilting; or
 - ii) Where a system is incorporated which operates automatically to support the platform of such scaffold and its load in the event of failure of the primary suspension wire rope of such scaffold.

14.0. SAFETY IN THE ERECTION OF STRUCTURAL FRAME & FORMWORK

14.1. GENERAL PROVISION

- a. The trained building worker under the direct supervision of a person, responsible for structural frame and formwork, shall be employed for erection of such structural frame or formwork, dismantling of building and structure and performance of and engineering work formwork, false work and shoring work;
- b. Adequate measures shall be taken to guard against hazards arising from any temporary state of weakness or unsuitability of a structure.

14.2. FORMWORK, FALSE WORK AND SHORING

- a. Formwork and false work shall be so designed, constructed and maintained that such formwork and false work are able to support the load that may be imposed on them;
- b. Such formwork shall be so erected that working platform, means of access, bracings, means of handling and stabilizing could easily be fixed with such formwork.

14.3. ERECTION OR DISMANTLING OF STEEL AND PREFABRICATED

- a. Erection or dismantling of any pre-fabricated structure shall be made safe against danger by using appropriate means such as ladders, gangways or fixed platforms, buckets, boatswains chair or other appropriate means suspended from lifting appliances, safety harness, life lines, catch nets or catch platforms, power-operated mobile working platforms etc.;
- b. The work of erection or dismantling of buildings or structures or formwork or false work or shoring or any other civil engineering work shall be carried out by trained building workers under the supervision of a person responsible for such work;
- c. Steel or prefabricated structures shall be so designed and made that such structures can be safely transported or erected; and weight of each unit of such structures shall be clearly marked on such unit;
- d. The design of each such part shall maintain stability of each part of the structures referred to in clauses above when erected, and to prevent danger, the design shall explicitly take into account –
 - i) The relevant conditions and methods of attachment in the operations of stripping, transport, storing and temporary support during erection of such parts;
 - ii) Safeguards, such as provision of railings with working platforms, and for mounting such railings and platforms easily on the structural steel or prefabricated parts;
- e. The hooks and softer devices built in or provided on the structural steel or prefabricate parts that are required for lifting and transporting such parts shall be so shaped, dimensioned and positioned to withstand the stresses to which such hooks or other devices are subjected;

- f. Prefabricated parts made of concrete shall not be stripped or erected before such concrete has set and hardened sufficiently to the extent provided for in the plans, and such parts are examined by the responsible person for any sign of damage before their use;
- g. Store-places shall be so constructed that –
 - i) There shall be no risk of structural steel or prefabricated parts falling or overturning;
 - ii) Storage conditions shall generally ensure stability and avoid damage having regard to the method of storage and atmospheric conditions; and
 - iii) Racks shall be set on firm ground and designed so that units cannot move accidentally in such store-places;
- h. Structural steel or pre-fabricated parts shall not be subjected to stresses prejudicial to their stability while they are stored or transported or raised or set down;
- i. Tongs, clamps and other appliances for lifting structural steel and prefabricated part shall be:
 - i) In such shape and dimensions as to ensure a secure grip without damaging and marked with the maximum permissible load in the most unfavourable lifting conditions; and
 - ii) Structural steel or pre-fabricated parts shall be lifted by such methods and appliances that prevent them from spinning accidentally;
- j. Structural steel or pre-fabricated parts shall be provided with railings and working platforms before raising such parts to prevent any danger of falling of building workers, materials or articles at the time of any work with such parts;
- k. All reasonably practical measures shall be taken to avoid injury to building workers, building structure or equipment while structural steel or pre-fabricated parts are handled or stored or transported or raised or lowered;
- l. Structures shall not be worked on during violent storms or high winds or any other such hazardous situation;
- m. The risk of falling to which building workers, moving on high or sloping girders, may be exposed is limited by all means of adequate collective protection or by the use of a safety harness which shall be well secured to a sufficiently strong supports;
- n. Structural steel parts, which are to be erected at a great height, shall, as far as practicable, be assembled on the ground;
- o. When structural steel or pre-fabricated parts are being erected, a sufficiently extended area underneath the workplace shall be barricaded or guarded;
- p. Steel trusses, which are being erected, shall be adequately shored, braced or guyed until they are permanently secured in position;
- q. Structural members shall not be forced into place by the hoisting machine while any building worker is in such a position that he is likely to be injured by such operation.

14.4. FORMWORK

- a. All formwork shall be properly designed keeping in view the safety of building workers, buildings or structures;
- b. A responsible person for structural frame and formwork shall –
 - i. Inspect and examine the material, timber, structural steel and scaffolding for its strength and suitability before being taken into use;
 - ii. Lay-down procedures to cover all stages of such structural frame and formwork;
 - iii. Supervise such structural frame and formwork;
 - iv. Take all necessary steps or measure to correct any situation with a view to prevent accident or dangerous occurrence during performances of such structural frame and formwork.

14.5. DE-SHORING

- a. When shoring is removed, sufficient props shall be left in place of such shoring to prevent any possible hazard; and
- b. Deshoring shall be adequately braced and tied together with support to prevent any hazard.

15.0. SAFETY IN CONCRETE WORK

15.1. GENERAL PROVISIONS REGARDING USE OF CONCRETE

- a. All construction with the use of concrete or reinforced concrete shall be based on plans including specification of steel and concrete and other material to be used in such construction –
 - i. Giving technical details regarding methods for safe placing and handling of such materials and indicating the type, quality and arrangement of each part of a structure of such construction; and
 - ii. Explaining the sequence of steps to be taken for completion of such construction;
- b. Formwork and shores used for concrete work shall be structurally safe and properly braced or tied together so as to maintain position and shape of formwork or shores;
- c. Formwork structure used shall have sufficient catwalks and other secure access for inspection of such structure if such structure is in two or more tiers;
- d. No machinery or any object should fall below by using wire nets, screen nets etc.

15.2. PREPARATION AND POURING OF CONCRETE AND ERECTION OF CONCRETE STRUCTURE

- a. A building worker handling cement or concrete shall –
 - i) Wear close-fitting clothing, gloves, helmet or hardhat, safety goggles, proper footwear and respirator or mask to protect himself from danger in such handling;
 - ii) Keep as much of his body covered as is required to protect himself from danger in such handling;
 - iii) Take all necessary precautions to keep cement and concrete away from his skin in such handling;
- b. Lime pits shall be fenced or enclosed and filled and emptied by such devices, which do not require workers to go into the pit;
- c. Moving parts of the elevators, hoists screens bunkers, chutes, grouting equipment used for concrete work and of other equipment used for storing, transport and other handling ingredients of concrete shall be securely fenced to avoid contact of building workers with such moving parts;
- d. Screw conveyors used for cement, lime and other dusty materials shall be completely enclosed.

15.3. BUCKETS

- a. Concrete buckets used with cranes or aerial cableways shall be free from projections from which accumulations of concrete could fall;
- b. Movements of concrete buckets shall be governed by signals necessary to avoid any danger by such movements.

15.4. PIPES AND PUMPS

- a. A scaffolding carrying a pipe for pumped concrete shall be strong enough to support such pipe at a time when such pipe is filled with concrete or water or any other liquid and carry the combined load of the all the building workers who may be on such scaffold at such time, safely;
- b. Every pipe for carrying pumped concrete shall be –
 - i) Securely anchored at its end point and at each curve on it;
 - ii) Provided near the top of such pipe with an air release valve;
 - iii) Securely attached to a pump nozzle by a bolted collar or other adequate means;
- c. The operation of concrete pumps shall be governed by standard signals;
- d. Building workers employed around a concrete pump shall wear safety goggles;

15.5. MIXING AND POURING OF CONCRETE

- a. The concrete mixture shall not contain any material, which may unduly affect the setting of such concrete, weaken such concrete or corrode steel used with such concrete;
- b. When dry ingredients of concrete are being mixed in confined spaces such as silos –
 - i) The dust shall be exhausted at the time of such mixing and
 - ii) In case the dust the dust cannot be exhausted, as specified, the workers shall wear respirators at the time of such mixing;
- c. When concrete is being tipped from buckets, building workers shall be kept out of the range of any kickbacks of such buckets;
- d. Loads shall not be dumped or placed on settling concrete.

15.6. CONCRETE PANELS AND SLABS

- a. All parts of a concrete panel or concrete slab shall be hoisted uniformly;
- b. Concrete panels shall be adequately braced in their final positions and such bracings shall remain in such positions until such panels are adequately supported by other parts of the construction for which such panels are used;
- c. Temporary bracings of concrete panels shall be securely fastened to prevent any part of such panels from falling when such panels are being moved.

15.7. STRESSED AND TENSIONED ELEMENTS

- a. Building workers shall not stand directly over jacking equipment while stressing of concrete girders and beams is being done;
- b. A pre – stressed concrete unit shall not be handled except at points on such unit and by the devices specified for such work by the manufacture of such devices;
- c. During transport, pre-stressed concrete girders or concrete beams shall be kept upright by bracing or other effective means;

- d. Anchor fittings for pre-tensioned strands of pre-stressed concrete girders of concert beams are kept in a safe condition in accordance with the instruction of manufacturer of such anchor fittings;
- e. Building workers shall not stand behind jacks or in line with tensioning elements and jacking equipment during tensioning operations of pre-stressed concrete girders of concrete beams;
- f. Building workers do not cut wires of pre – stressed concrete girders or concrete beams under tension before such concrete used of such girder or beams is sufficiently hardened.

15.8. VIBRATORS

- a. A building worker, who is in good physical condition, shall operate vibrators used in concreting work;
- b. All practical measures shall be taken to reduce the amount of vibration transmitted to the operators working in concreting work and
- c. When electric vibrators are used in concreting work
 - i) Such vibrators shall be earthed;
 - ii) The leads of such vibrators shall be heavily insulated; and
 - iii) The current shall be switched off when such vibrators are not in use.

15.9. INSPECTION AND SUPERVISION

- a. A person responsible for a concreting work shall supervise the erection of the formwork, shores, braces and other supports used for such concreting work, make a through inspection of every formwork to ensure that such formwork is safe, regularly inspect the formwork, shores, braces, reshores and other supports during the placing of concrete, keep all records of inspections referred to above at the workplace relating to such inspection and produce them for inspection upon the demand.
- b. Any unsafe condition, which is discovered during the inspections, shall be remedied immediately.

15.10. BEAMS, FLOORS AND ROOFS

- a. Horizontal and diagonal bracings shall be provided in both longitudinal and transverse direction as may be necessary to provide structural stability to formwork used in concreting work and shores used in such concreting work shall be properly seated on top and bottom and secured in their places;
- b. Where shores used in concreting work rest upon the ground, base plates shall be provided for keeping such shores firm and in level;
- c. Where the floor to ceiling height of a concreting work exceeds 9 m or where the formwork deck used in such concreting work is supported by shores constructed in two or more tiers, or where the dead, live and impact loads on the formwork used in such concreting work exceed 700 kilogram per m², the structure of such formwork shall be designed by a professional engineer in the relevant field and the specifications and drawings of such formwork kept at such construction site and produced on demand.

- d. Where a professional engineer designs the structure of the formwork used in concreting work, such engineer shall be responsible for the supervision of construction and the stability of such structure.

15.11. STRIPPING

- a. Stripping of formwork used in concreting work shall not commence until the concrete on such formwork is fully set, examined and certified to this effect by the responsible person and record of such examination and certification is maintained;
- b. Stripped forms in concreting work shall be removed or stock piled promptly after stripping from all areas in which building workers are required to work or pass;
- c. Protruding nail, wire ties and other formwork accessories not required for subsequent concreting work shall be pulled, cut or otherwise made safe.

15.12. RE-SHORING

- a. Re-shoring used in concreting work shall be provided to a slab or beam for its safe support after its stripping or where such slab or beam is subjected to superimposed loads due to construction above such slab or beam;
- b. The provisions applicable to shoring in a concreting work shall also be applicable to reshoring in such work or pass.

16.0. SAFETY IN CONSTRUCTION, REPAIR & MAINTENANCE OF STEEP ROOFS

16.1. WORK ON STEEP ROOFS:

All practicable measures shall be provided to protect the building workers against sliding when carrying outwork on steep roofs.

16.2. CONSTRUCTION AND INSTALLATION OF ROOFING BRACKETS

- a. Roofing brackets shall be constructed to fit the pitch of steep roof and such brackets shall be used to provide level working platform;
- b. Roofing bracket shall be secured in its place by nailing pointed metal projections attached to the underside of such bracket and securely driven into a steep roof on which it is used or secured by a rope passed over the ridgepole and tie of such roof.

16.3. CRAWLING BOARDS

- a. All crawling boards used for work on steep roofs shall be of adequate strength, made of sound material and of the type approved for the purpose of their use;
- b. Crawling boards shall be kept in good repairs and inspected by a responsible person before being taken into use;
- c. Crawling boards shall be secured to a steep roof on which it is used by ridge hooks or other effective means;
- d. A firmly fastened lifeline of adequate strength shall be strung beside each crawling board throughout its length while using such crawling boards.

17.0. SAFETY IN CATCHES PLATFORMS, HOARDINGS & CHUTES

17.1. CATCH PLATFORM

- a. Catch platform shall not be used for storage of material or as a working platform;
- b. Catch platform shall at least be of 2 m wide and inclined so that the position of outer edge of such platform is 1500 mm higher than the inner edge;
- c. The open end of catch platform shall be properly fenced to the height not less than 1 m.

17.2. HOARDINGS:

Hoardings shall be constructed when the Registering Authority / Assistant Labour Commissioner considers it necessary for protection of building workers and directs such employer to construct such hoardings.

17.3. CHUTES, ITS CONSTRUCTION AND USE

- a. Wooden or metal chutes which are at an angle of more than 45° to the horizontal and used for the removal of materials shall be closed on all sides except at their openings used for receiving or discharging of materials or articles;
- b. All openings of chutes except their top openings shall be closed when not in use;
- c. Every chute –
 - i. Shall be constructed of sound material, adequate strength and suitable for the purpose it is intended for use;
 - ii. Exceeding 12 m in height shall be constructed in accordance with the design and drawings of professional engineer for such;
 - iii. A suitable warning notice shall be displayed at conspicuous locations, written in Hindi and in a local language, at the discharge end of every chute;
 - iv. Shall be cleared when debris has accumulated to a height, which can pose danger to building worker, but such clearance shall be done in no case less frequently than once a day.

18.0. SAFETY IN WORK ON OR ADJACENT TO WATER

18.1. TRANSPORT OF WORKERS BY WATER

- a. When any building worker has to proceed to or from any workplace by water for purposes of carrying on a building or other construction work, proper measures shall be taken to provide for his safe transportation and vessels used for such purpose shall be in charge of a responsible person, properly equipped for safe navigation and maintained in good condition;
- b. Maximum number of persons which can be safely carried in a vessel shall be marked plainly and conspicuously on such vessel and such number shall not be exceeded during use of such vessel for carrying persons;
- c. Adequate protecting shall be provided to the building workers in such vessel from inclement weather;
- d. Such vessel shall be manned by adequate and experienced crew;
- e. In case the bulwarks of such vessel are lower than 60 cm from the level of the deck of such vessel, the open edge of such bulwarks shall be fitted with suitable fencing to a height of at least 1 m above such deck and the post and stanchions and similar parts used in such fencing shall not be spaced more than 2 m;
- f. The number of life buoys on deck of such vessel shall at least be equal to the number of crew members of such vessel and shall not be less than two;
- g. All life buoys on deck of such vessel shall be kept in good state of maintenance and so placed that if such vessel sinks then they will remain afloat and one of such buoys shall be within the immediate reach of the Steersman of such vessel and another is situated after part of such vessel; and
- h. The position of the steersman of the vessel shall be such that he has a reasonably free view of all sides.

18.2. PREVENTION FROM DROWNING

- a. Where, on or adjacent to the workplace of any contraction site, there is water into which a building worker employed for work on such site, in the course of his employment, may fall and has the risk of drowning, suitable rescue equipment shall be provided and kept in an efficient state of ready use and measures shall be taken to arrange for the prompt rescue of such building worker from the danger of drowning and where there is a special risk of such fall from the edge of adjacent land or from a structure adjacent to or above the water, or from floating stage on such water, secure fencing shall be provided near the edge of such land, structure or floating stage, as the case may be, to prevent such fall, and such fencing may be removed or allowed to remain unerected for the time and to the extent necessary for the access of building workers to such work or the movement of material for such work;
- b. For handling rescue equipment, at least two persons knowing diving should be available at such sites.

19.0 SAFETY IN COFFERDAMS & CAISSONS

19.1 EVERY COFFERDAM AND CAISSON SHALL BE

- 19.1.1 Of good construction, sound material and of adequate strength, provided with adequate means for workers to reach safely at the top of such cofferdam or caisson in the event of an inrush of water and safe means of access to every place where workers shall be employed;
- 19.1.2 Work relating to construction, positioning, modification, dismantling of cofferdams or caissons shall be carried out under the supervision of a responsible person and inspected by the responsible person at the specified intervals;
- 19.1.3 A worker shall be allowed to work in a cofferdam or caisson after such cofferdam or caisson has been inspected and found safe by responsible person within such preceding period as approved and a record of such inspection maintained.

19.2 WORK IN COMPRESSED AIR IN A COFFERDAM OR CAISSON SHALL BE

- 19.2.1 Carried out in accordance with the procedure laid down;
- 19.2.2 Carried out by such building workers who have completed eighteen years of age and are medically examined and found fit for the work;
- 19.2.3 Carried out under the supervision of a responsible person;
- 19.2.4 If the work in cofferdam or caisson is carried out in shifts, a record of the time spent by each worker in each such shift for carrying out the work shall be maintained in a register with particulars or time taken for the compression of such building worker, if any;
- 19.2.5 At every work site or project in a cofferdam or caisson, where workers are employed to work in compressed air environment, a construction medical officer assisted by a nurse or trained first-aid attendant, shall be available at all times and there shall be one standby reserve compressor to meet the emergency.

19.3 PRESSURE PLANT AND EQUIPMENT

- 19.3.1 Pressure plant and equipment for which it is used shall be –
- 19.3.2 Properly maintained in good repairs and working condition and fitted with a suitable safety valve or other effective device to provide maximum safe discharge pressure from being exceeded at any time; a suitable pressure gauge with a dial range not less than 1.5 times and not exceeding twice the maximum working pressure, easily visible and designed to show at all times, the internal pressure in kilogram per square centimeter and marked with the maximum safe working pressure, a suitable stop valve or valves by which the pressure plant or the system of the pressure plant may be isolated from the source supply of pressure or otherwise;
- 19.3.3 Every pressure plant or equipment shall be thoroughly examined by the competent person, externally, once in every period of six months; internally, once in every period of twelve months; and by hydraulic test, once in a period of four years.

20. SAFETY IN DEMOLITION WORK

20.1 PREPARATION

- 20.1.1 All glass or similar material or article in exterior openings shall be removed before commencing any demolition work and all water, steam, electric, gas and other similar supply lines put off and suitably capped and the concerned department of the appropriate authority informed and permission obtained wherever required before commencing;
- 20.1.2 Wherever it is necessary to maintain water, gas or electric line or power during such demolition, such line shall be so located or protected with substantial coverings so as to protect it from damage and to afford safety to the building workers and the general public.

20.2 PROTECTION OF ADJACENT STRUCTURES

20.2.1 Examination of walls etc. of adjacent structures –

- i) During demolition process, the contractor shall examine the walls of all structures adjacent to the structure to be demolished to determine the thickness, method of support to such adjacent structures and;
- ii) In case, such employer has reason to believe that any of such adjacent structure is unsafe or may become unsafe during such demolition process, he shall not perform demolition activity unless stability to such unsafe adjacent structure from collapsing has been taken. All roads and open spaces adjacent to the site of demolition work shall be closed or suitably protected by bracketing.

20.3 DEMOLITION OF WALLS, PARTITIONS, ETC.

- 20.3.1 Any demolition of walls or partitions shall be proceeded in a systematic manner as per the standard safe operating practices approved and all work above each tier of any floor beams shall be completed before the safety of the supports of such beam is impaired;
- 20.3.2 Masonry shall be neither loosened nor permitted to fall in such masses or volume or weight as to endanger the structural stability of any floor or structural supports;
- 20.3.3 No wall chimney or other structure or part of a structure shall be left unguarded in such a condition that it may fall, collapse or weaken due to wind pressure or vibration;
- 20.3.4 In the case of demolition of exterior walls by hand, safe footing shall be provided for the workers employed in, such walls or partitions, which are to be demolished by hand shall be not left standing more than one storey high above the uppermost floor on which persons are working.

20.4 **METHOD OF OPERATION:** The contractor shall ensure that debris, bricks and other materials or articles are removed by means of chutes, buckets or hoists and through openings in the floors.

20.5 ACCESS TO FLOOR

- 20.5.1 Safe access to and egress from every building shall be provided at all times in the course of demolition by means of entrances hallways, stairways or ladder runs which shall be so protected as to safeguard the workers using such means from falling material or articles;

- 20.5.2 Demolition of structural steel etc. shall be demolished column by column and tier by tier and every structural member, which is being demolished, shall not be under any stress, and such structural member shall be suitably lashed to prevent it from any uncontrolled swinging, dropping or falling or falling;
- 20.5.3 Large structural members shall not be thrown or dropped from the building, but carefully lowered by adopting suitable safe method;
- 20.5.4 Where a lifting appliance like a derrick is used for demolition, the floor on which such lifting appliance rests shall be completely planked over or supported and such floor shall be of adequate strength to sustain bearing load for such lifting appliance and its operation.

20.6 STORAGE OF MATERIAL OR ARTICLE

- 20.6.1 No materials or articles shall be not stored or kept on platform, floor or stairways of a building being demolished, provided that this clause shall not apply to the floor of a building when such floor is of such strength as to support safely the load to be superimposed by storing such material or articles;
- 20.6.2 No access to any stairway or passageway shall be affected or blocked by storing any material or article;
- 20.6.3 Suitable barricades shall be provided so as to prevent materials or articles from sliding or rebounding into any space used by the workers.

20.7 FLOOR OPENINGS:

Every opening used for the removal of debris from every floor which is not closed to access, except the top or working floor, shall be provided with an enclosure from such floor to its ceiling, or such opening is so barricaded that no building worker shall access to within a horizontal distance of 6.0 m from such opening through which debris is being dropped.

20.8 INSPECTION:

A person responsible for demolition work shall make continuous inspections during demolition process so as to detect any hazard resulting from weakened or deteriorated floors or walls or loosened materials or articles, and that no building worker shall be permitted to work where such hazard exist unless remedial measures like shoring or bracing shall be taken to prevent such hazards.

20.9 WARNING SIGNS, BARRICADES, ETC.

- 20.9.1 Barricades and warning sign shall be erected along every side throughout the length and breadth of a building or other construction work to be demolished to prevent unauthorized persons from entering into the during demolition operations;
- 20.9.2 During the demolition of an exterior masonry wall or a roof from a point more than 12 m above the adjoining ground level of such wall or roof, if persons below such wall or roof are exposed to falling objects, suitable and safe catch platform shall be provided and maintained at a level not more than 6 m below the working level except where an exterior built-up scaffold is provided for safe and adequate protection of such persons;
- 20.9.3 Suitable and standard warning signs shall be displayed or erected at conspicuous places or position at the workplace;

20.10 MECHANICAL METHOD OF DEMOLITION

20.10.1 The following requirements shall be fulfilled in case the mechanical method of demolition like use of swinging weight, clamshell bucket, power shovel, bulldozer or other similar mechanical methods are used for the purpose of demolition namely –

- i) The building or structure or structure or remaining portion thereof shall be not more than 12 m in height;
- ii) Where a swinging weight is used for demolition, a zone of such demolition having a radius of at least 1.5 times the height of the structure of portion thereof being demolished shall be maintained around the points of impact of such swinging weight;
- iii) Where a clamshell bucket is being used for demolition, a zone of demolition shall be maintained within eight metres of the liner of travel of such bucket;
- iv) Where other mechanical methods are being used to affect total or partial collapse of a building or other construction work, there shall be maintained, in the area into which the affected portion of such building or other construction work may fall, a zone of demolition at least 1.5 times the height of such affected portion thereof; and
- v) No person other than building workers or other persons essential to the operation of demolition work shall be permitted to enter a zone of demolition, which shall be provided with substantial barricades.

21. FIRE EXTINGUISHERS & OTHER APPLIANCES OF FIRE FIGHTING

21.1 FIRE EXTINGUISHERS & OTHER MEANS OF PREVENTION AND PROTECTION

21.1.1 Every contractor shall have a fire protection and prevention plan developed and implemented keeping in view the following:

- i) The specific work practices requiring fire control measures;
- ii) Response measures to be taken in case of fire;
- iii) Equipment required;
- iv) Personnel requirements and responsibilities;
- v) Schedules of daily and weekly inspection;
- vi) Open flames and fires are prohibited in all underground construction;
- vii) Readily visible signs to be posted in the fire prone/inflammable/explosive areas prohibiting smoking use of open flames and other hot work.
- viii) A system of Permit-to-Work.

27.1.2 For the protection of the workers from the outbreak of fire, the contractor shall Provide, maintain and regularly inspect the Fire extinguishing equipment, which shall be sufficiently provided to extinguish any probable fire;

Suitability of portable fire extinguishers			
Class of fire	Type of extinguisher		
	Water	DCP	CO ₂
A	Yes	Yes	Yes
B	No	Yes	Yes
C	No	Yes	Yes
D	No	Yes	Yes
Electrical	No	Yes	Yes

27.1.3 Ensure availability of an adequate supply of water at ample pressure;

27.1.4 Make available

- i. Adequate number of trained persons required to operate the fire extinguishing equipment;

- ii. Properly maintain Fire extinguishing equipment and inspect them at regular intervals of not less than once in a year by the responsible person and a record of such inspections maintained;
- 27.1.5 Portable fire extinguishers provided in the operator's cabin of earthmoving machinery, material handling systems, construction equipment etc. shall be regularly inspected, maintained and replenished/refilled;
- 27.1.6 The operators and the helpers of such equipment shall be trained in the methods operating the equipment and fighting the fire effectively;
- 27.1.7 All combustion engine power equipment shall be so located that the exhausts are well away from combustible material;
- 27.1.8 No smoking shall be allowed at or in the vicinity of operations, which constitute fire hazards and shall be conspicuously posted with No smoking or open flame **signs**;
- 27.1.9 In the flammable environment as described in IS: 9570, the electrical fittings and equipment shall be of flame proof type conforming to IS: 2206 & IS: 2148;
- 27.1.10 Arrangements shall be made to contain sparks generated during welding, cutting or other operations and spark shall not be allowed to fall down on combustible material kept below; All means of exit shall be kept free of obstruction at all times;
- 27.1.11 Appropriate type of fire extinguishers according to IS: 5698 shall be kept in fully charged condition at the places which have potential risk of fire;
- 27.1.12 The contractor shall educate his or his sub-contractors' men working in the vicinity of fire risk, on how to operate these equipment and know in particular circumstances which type of extinguishers is to be used;
- 27.1.13 The contractor shall take full responsibility for the upkeep and replenishment/refilling of the fixed and portable fire extinguishers.

APPENDIX

Annexure I

IMPORTANT INDIAN STANDARDS RELATED TO SAFETY

Personal Protection

- IS: 1179-1967 Equipment for eye and face protection during welding
- IS: 4770-1991 Rubber gloves for electrical purposes
- IS: 8519-1977 Guide for selection of industrial safety equipment for body protection
- IS: 8520-1977 Guide for selection of industrial safety equipment for eye, face & ear protection
- IS: 8807-1978 Guide for selection of safety equipment for protection of arms and hands
- IS: 1224-1985 Safety shoes
- IS: 2925-1984 Safety helmets
- IS: 8940-1978 Code of practice for maintenance and care of industrial safety equipment eye and face protection
- IS: 8990-1978 Code of practice for maintenance and care of industrial safety clothing
- IS: 10667-1983 Guide for selection of industrial safety for protection of foot and leg
- IS: 816-1969 Code of practice for safety and health requirements in electric and gas welding and cutting operations
- IS: 818-1968 Code of practice for safety and health requirements in electric and gas welding and cutting operations
- IS: 7194-1994 Assessment of noise exposure during work for hearing conservation purposes

Civil Engineering Construction

- IS: 2750- 1967(Part II) Steel scaffolds
- IS: 875-1987 Structural safety of building: loading standards
- IS: 4014-1967 Code of practice for steel tubular scaffolding
- IS: 3696 Safety code of scaffolds and ladders
- IS: 4138-1977 Safety code for working in compressed air
- IS: 4912-1978 Safety requirements for floor and wall openings, railings and toe boards
- IS: 7293-1974 Safety code for working with construction machinery
- IS: 9944-1992 Recommendations on safe working load for natural and man-made rope slings
- BS: 1129 Portable timber ladders, steps, Trestles & lightweight staging
- BS: 1139 Metal scaffolds
- BS: 5973 Code of practice for access & working scaffolds
- BS: 5974 Code of practice for temporary installed scaffolds and access equipment
- BS: 5975 Code of practice for falsework

Fire Protection

- IS: 2190-1992 Code of practice for selection, installation and maintenance of portable first-aid fire extinguishers
- IS: 5896 Code of practice for selection, operation and maintenance of fire-fighting appliances

IS: 8433-1984 Code of practice for dissolved acetylene cylinders

Electrical

IS: 3043-1987 Code of practice for earthing

IS: 5424-1969 Rubber mats for electrical purposes

IS: 3646 (Part II) Artificial lightings

IS: 2148 & IS: 2206 Flame proof electrical fittings

Machinery

IS: 1860-1980 Code of practice for installation, operation and maintenance of electric passenger and goods lifts

IS: 1991-1987 Safety requirements for the use, care and protection of abrasive grinding wheels

IS: 5903-1970 Safety devices for gas cylinders

IS: 8216-1976 Guide for inspection of lift wire ropes

IS: 8964-978 Recommendations for safety conditions for woodworking machines

IS: 9474-1980 Principles of mechanical guarding of machinery

IS: 11461-1985 Code of practice for compressors safety

IS: 13367-1992 Code of practice for safe use of cranes

BASIC STRUCTURE OF SAFETY PLAN

- 01- Safety Policy
- 02- When was the Safety Policy last reviewed
- 03- Details of implementation procedure / methods to implement Safety Policy / Safety Rules
- 04- Qualification & Experience of Safety Officers
- 05- Review of Accidents analysis - Methods to ensure safety & health and steps identified for prevention of accidents
- 06- Unit/site Executive responsible for ensuring safety at various levels in the workplace
- 07- List of Employees trained in safety at the commencement of execution of the job; details of training – its module and contents
- 08- Safety Training Targets, Schedules, Methods to be adopted for providing safety training to all employees
- 09- Details of checklists for different jobs/ work & responsible persons to ensure Compliance
- 10- Regular Safety Inspection Methods and Periodicity and the list of members authorized
- 11- Risk Assessment, Safety Audit by professional agencies, their Periodicity
- 12- Implementation of recommendations of Audit / Inspections. - Procedures for implementation & follow-up
- 13- Provision for treatment of Injured persons at work site
- 14- Review of overall safety by top Management and Periodicity
- 15- System for implementation of statutory provisions.
- 16- Issue of PPE to employees, Periodicity / stock on hand, etc.

Signature

Head of Organization

With Date & Stamp

Annexure - III

CONFINED SPACE WORK PERMIT

Date of Work :		Initiator:		Permit No.:	
Description of work :					
Name of person supervising:			Dept./Function:		
Names of workmen involved in the job :					
1		2			
3		4			
Exact Location of Work:					
JSA Reference No.					
Job Instruction & Confirmation Sheet Ref. No					
Valid From : Time Date: To Time: Date:					
Other relevant information (if any)					
Initiated by Engineer / Supervisor of Agency			Checked by Agency Safety Representative		
Name				Name	
Signature				Signature	
Date				Date	
Check list for Authorization of Work Permit					
Minimum and Mandatory Precautions					Y/ N / NA
1	Permit form filled in completely?				
2	Have wind, atmospheric, and work area conditions (e.g. cold, hot, snow, poor lighting & Ventilation etc.) been considered throughout the job so that work can be done safely?				
3	All necessary Personnel Protective Equipment like Breathing Set, Waist Rope, Light Mounted Helmet etc. is put on by all the workmen?				
4	A lifeline, a rope tied on the safety belt of the person entering the confined space is provided?				
5	All practicable measures are taken to ensure that the atmosphere inside is not deficient in oxygen and does not contain flammable vapors and no hazardous gases like H ₂ S. (Open at least 2 manholes & keep for 2 hours)?				
6	One fully trained person is stationed at ground level/outside to assist the inside workers and emergency contact No's available?				
7	All the workers trained for emergency?				

8	Safe means of access and egress provided?		
9	Is the suitable fire extinguisher available at work location?		
10	Are they Using only 24V lamps & working tools inside the confined space?		
Following additional precautions need to be taken before the start of the work			
Permit Issued By:			
	Approved by Principal Agency work in charge		Endorsed by Principal Agency HSE Dept
Name			
Signature			
Date			
Permit Close Out by: Name & Signature (Principal Agency)			
Date :		Time :	
Note: All extra information on preparation and precautions to be provided on the reverse side of this PTW.			

HOT WORK PERMIT

Date of Work :		Initiator:		Permit No.:	
Description of work :					
Name of person supervising:			Dept./Function:		
Names of workmen involved in the job :					
1		2			
3		4			
Exact Location of Work:					
JSA Reference No.					
Job Instruction & Confirmation Sheet Ref. No					
Valid From : Time Date: To Time: Date:					
Other relevant information (if any)					
Initiated by Engineer / Supervisor of Agency			Checked by Agency Safety Representative		
Name				Name	
Signature				Signature	
Date				Date	
Exact location of work					
Relevant information					
Check list for Authorization of Work Permit					
Minimum and Mandatory Precautions					Y/ N / NA
1	Permit form filled in completely?				
2	Form filled in correctly and in full.				
3	Has the work area been inspected for any abnormalities - specify on wind, atmosphere, surroundings, etc.				
4	Are the necessary PPE provided and do the workmen know their use?				
5	Is the fitter, experienced and knowledgeable enough to carry out the job?				
6	Area has to be cleared of any flammables and combustible material.				
7	Electrical equipment to be protected and grounded.				
8	Are fire-fighting equipment - extinguishers, water, sand buckets etc, located nearby for ready in case of any mishap?				
9	Gas cylinders in upright state/ trolleys/ flash-back arrestors/ hose condition/ NRVs, etc.				
10	Is the area easily accessible?				

Additional precautions to be taken:		
This permit is valid only for one week. A fresh hot work permit has to be taken for continued works for the next week.		
Permit Issued By:		
	Approved by Principal Agency work in charge	Endorsed by Principal Agency HSE Dept
Name		
Signature		
Date		
Permit Close Out by: Name & Signature (Principal Agency)		
Date :		Time :
Note: All extra information on preparation and precautions to be provided on the reverse side of this PTW.		

PERMIT FOR LIFTING OF MATERIAL

Date of Work :	Initiator:	Permit No.:
Description of work:		
Name of person supervising:		Dept./Function:
Names of workmen involved in the job :		
Exact Location of Work:		
JSA Reference No.		
Job Instruction & Confirmation Sheet Ref. No		
Valid From : Time Date: To Time: Date:		
Other relevant information: (If any)		
Initiated by Engineer / Supervisor of agency		Checked by Agency Safety Representative
Name		Name
Signature		Signature
Date		Date
Check list for Authorization of Work Permit		
1	Details of type of crane(s) to be used?	
2	Name of Lift Co-ordinator, Rigger/Crane Operator?	
3	Adequate and suitable lifting gears available and in good condition	
4	Have soil, wind, atmospheric, and work area conditions (e.g. cold, hot , snow, poor lighting & Ventilation etc.) been considered throughout the job so that work can be done safely?	
5	Lifting Equipments, Lifting gears and Slings are tested and certified?	
6	Are all operators trained, competent and healthy (Having Licenses / Experience Certificate)?	
7	Are all the examinations and tests carried out on the equipment (Crane) and certified by competent persons?	
8	Is the safe working load (SWL) marked on all lifting tools & tackles?	
9	Lifting area cordoned off?	
10	Tag lines provided to control the swing of load?	
11	Load tied properly and secured against toppling and falling?	
12	Signalman/Rigger is provided and competent?	
13	Proper communication available between operator and rigger?	
14	Is the vehicle for transportation adequate for the load?	

Following additional precautions need to be taken before the start of the work:			
Permit Issue b By:			
Approved by Principal agency work incharge		Endorsed by main agency HSE Dept	
Name		Name	
Signature		Signature	
Date		Date	
Permit Close Out by: Name & Signature (Main agency)			
Date :		Time :	
Note: All extra information on preparation and precautions to be provided on the reverse side of this PTW.			

WORKING AT HEIGHT PERMIT

Date of Work :	Initiator:	Permit No.:
Description of work :		
Name of person supervising:		Dept./Function:
Names of workmen involved in the job :		
1	2	
3	4	
Exact Location of Work:		
JSA Reference No.		
Job Instruction & Confirmation Sheet Ref. No		
Valid From : Time Date: To Time: Date:		
Other relevant information		
Initiated by Engineer / Supervisor		Checked by Agency Safety Representative
Name		Name
Signature		Signature
Date		Date
Check list for Authorization of Work Permit		
Minimum and Mandatory Precautions		Y/ N / NA
1	Permit form filled in completely?	
2	Work area below is temporarily cordoned/barricaded	
3	The scaffold erected has pipes and clamps in good condition.	
4	Diagonal / lateral bracings pipes are provided to ensure stability	
5	Access ladder is provided to reach the work location	
6	Planks / sheet used in temporary platform are in good condition	
7	Planks / sheets are tied properly using binding wire	
8	Temporary platform is having temporary side railing	
9	Workers are wearing Helmet, Shoes & Safety belt in good condition.	
10	For Anchoring of safety belt at height rigid support / life rope line is provided	
11	Experienced workers are engaged for work	
12	Portable elect equip/fibre body checked for its healthiness including earthing	
13	The sling / pulley blocks / ropes are tested for fitness	

14	Workers are briefed on Safety Precautions to be taken	
	Power hand tools used at eight are connected through 30mA ELCB.	
Following additional precautions need to be taken before the start of the work		
Permit Issued By:		
	Approved by Principal Agency work in charge	Endorsed by Principal Agency HSE Dept
Name		
Signature		
Date		
Permit Close Out by: Name & Signature (Principal Agency)		
Date :		Time :
Note: All extra information on preparation and precautions to be provided on the reverse side of this PTW.		

DEFINITIONS

1. **Building or other construction work:** means the construction, alteration, repairs, maintenance or demolition, of or, in relation to, buildings, streets, roads, railways, tramways, airfields, generation, transmission and distribution of power, water works, oil and gas installations, electric lines, tunnels, bridges, viaducts, pipelines, towers, cooling towers and such other work as may be specified.
2. **Building worker:** means a person who is employed by a contractor to do any skilled, semi-skilled or manual, supervisory, technical or clerical work for hire or reward, whether the terms of employment be expressed or implied, in connection with any building or other construction work;
3. **Establishment:** means an establishment who or which employs building workers in any building or other construction work, and includes an establishment belonging to a contractor;
4. **Contractor:** means a person who undertakes to produce a given result for any establishment, other than a mere supply of goods or articles of manufacture by the employment of building workers or who supplies building workers for any work of the establishment, and includes a sub-contractor or any other agency engaged on his behalf;
5. **Employer:** in relation to an establishment, means the owner thereof that is the contractor himself.
6. **Competent Person:** means a person so approved by the Central Government who belongs to a testing establishment in India possessing adequate qualification, experience and skill for the purpose of testing, examination or annealing and certification of lifting appliances, lifting gears, wire ropes or pressure plant or equipment;
7. **Responsible Person:** means a person appointed by the employer to be responsible for the performance of specific duty or duties and who has sufficient knowledge and experience and the requisite authority for the proper performance of such duties;
8. **Danger:** means danger of accident or of injury or danger to health;
9. **Hazard:** means danger or potential danger;
10. **Hazardous substance:** means any substance, which due to its explosiveness, inflammability, radioactivity, toxic or corrosive properties and similar hazardous characteristics may Cause injury; or Affect adversely the human system; or Cause loss of life or damage to property or environment;
11. **Hazardous Process:** comprises roof work, steel erection, and work under and over water, demolition and work in confined space;

- 12. National Standard:** means standards as approved by the Bureau of Indian Standards (BIS) and in the absence of such standards, the standards approved by the Central Government for a specific purpose;
- 13. Lifting Appliance:** means a crane, hoist, derrick, winch, jack, pulley block or other equipment used for lifting materials, objects or building workers;
- 14. Lifting gear:** means ropes, chains, hooks, slings and other accessories of a lifting appliance;
- 15. Safe Operating Practice:** Means the practice followed in building and construction activities for the safety of workers and for safe operation of machinery and equipment used in such activities. Such practices shall conform to all or any of the following:
- Relevant Standards approved by BIS;
 - National Building Codes;
 - Manufacturer's instruction on safe use of equipment and machinery;
 - Code of practice on safety in construction industry published by International Labour Organization .
- 16. Safe working load:** in relation to an article of lifting gear or lifting appliance, means the load which is the maximum load that may be imposed on such article or appliance with safety in the normal conditions as assessed and certified by a competent person;
- 17. Workplace:** means all places where building workers are required to be present or to go for work and which are under the control of an employer;
- 18. Personal Protective Equipment (PPE):** are the protective devices made available for individual or collective use of the workers likely to be affected by the hazards of the workplace or process;
- 19. Construction & Erection Manual (E&C) Rules:** all references to E&C Manual shall mean the Construction & Erection Rules that are detailed hereunder;
- 20. Engineer in-charge:** All references to the Engineer in-charge shall mean the person in-charge of a building and construction of the NTPC.
- 21. Interpretation of words not defined:** words and expressions not defined or used in this Manual shall have the same meaning as generally assigned in common engineering practices

CONTRACT CLOSING CERTIFICATES

CERTIFICATE NO.	CERTIFICATE DESCRIPTION	RESPONSIBILITY	LIMITING DATES FOR ISSUANCE OF CERTIFICATE
CCP-01	Certificate of Final Amendment to the Contract	Corporate Contract Services	7 Months from Completion of Facilities
CCP-02	Drawing Receipt Certificate	Corporate Engineering	2 Months from Completion of Facilities
CCP-03	QA Documents Receipt Certificate	CQA&I	2 Months from Completion of Facilities
CCP-04	O&M Manual Receipt Certificate	Corporate Engineering	4 Months from Completion of Facilities
CCP-05	Scope Completion Certificate	Site Erection	8 Months from Completion of Facilities
CCP-06	Liquidated Damages for Delay Certificate		
(a)	For cases where LD for delay is settled by Corporate Contracts	Corporate Contract Services	7 Months from Completion of Facilities
(b)	For cases where LD for delay is settled by the Regions/ Site	Concerned Site/ Regional offices	7 Months from Completion of Facilities
CCP-07	Shortfall in Equipment Performance Certificate	• Corporate OS : Site Performance Test- Cat-I • Regional OS: Site Performance Test- Cat-II • Site : Site Performance Test-Cat-III • CQA&I : Shop Test	5 Months from Performance and Guarantee (PG) Tests
CCP-08	"Material Reconciliation" Certificate	Site Erection & Site Materials Mgmt.	6 Months from Completion of Facilities
CCP-09	"Payment Reconciliation" Certificate : Indian Contractor	Site Finance	6 Months from Completion of
CCP-10	Certificate regarding Labour Payments and Statutory Requirements to be furnished by Contractor.	Contractor	9 Months from Completion of Facilities
CCP-11	"No Demand Certificate" by Contractor	Contractor	6 Months from PG Tests
CCP-12	Certificate for Completion of Warranty Period	Site Erection	14 Months from Trial Operation/ Completion of Facilities

CONTRACT CLOSING CERTIFICATES

CERTIFICATE NO.	CERTIFICATE DESCRIPTION	RESPONSIBILITY	LIMITING DATES FOR ISSUANCE OF CERTIFICATE
CCP-13	Certificate for Return of BGs/ Insurance Surety Bonds/Indemnity Bonds etc.	Site Finance/ Corporate Finance	All BGs except CPG: 5 Month from Trial Operation / Completion of Facilities CPG: 15 Months from Trial Operation/ Completion of Facilities

No.F.7/10/2021-PPD (1)
Government of India
Ministry of Finance
Department of Expenditure
Procurement Policy Division

264-C, North Block, New Delhi.
23.02.2023.

Order (Public Procurement No. 4)

Subject: Restrictions under Rule 144(xi) of the General Financial Rules (GFRs), 2017.

Attention is invited to Order (Public Procurement No. 1) issued vide F.6/18/2019-PPD dated 23.07.2020, Order (Public Procurement No. 2) issued vide F.6/18/2019-PPD dated 23.07.2020, Order (Public Procurement No. 3) issued vide F.6/18/2019-PPD dated 24.07.2020, Office Memorandum (OM) No. F.18/37/2020-PPD dated 08.02.2021, OM No. F.12/1/2021-PPD(Pt.) dated 02.03.2021 and OM No. F.7/10/2021-PPD dated 08.06.2021. In this regard, the following is hereby ordered under Rule 144(xi) (as amended vide OM No. F.7/10/2021-PPD dated 23.02.2023) on the grounds stated therein, in supersession to all of the above mentioned Orders/ clarifications:

Requirement of registration:

2. Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority, specified in **Annexure I**.
3. Any bidder (including an Indian bidder) who has a Specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority, specified in **Annexure I**.
4. The requirement of registration for cases covered by paragraph 2 above has been applicable since 23.07.2020. The requirement of registration for bidders covered by paragraph 3 above will be applicable for all procurements where tenders are issued/ published after 01.04.2023.
5. In tenders issued after 23.07.2020 or 01.04.2023, as the case may be, the provisions of requirement of registration of bidders and of other relevant provisions of this Order shall be incorporated in the tender conditions.

Applicability:

6. Apart from Ministries/ Departments, attached and subordinate bodies, notwithstanding anything contained in Rule 1 of the GFRs 2017, the Order shall also be applicable

- a) to all Autonomous Bodies;
- b) to all public sector banks and public sector financial institutions;
- c) to all Central Public Sector Enterprises;
- d) to all procurement in Public Private Partnership projects receiving financial support from the Government or public sector enterprises/ undertakings; and
- e) Union Territories, National Capital Territory of Delhi and all agencies/ undertakings thereof.

7. This order will not be applicable for cases falling under **Annexure II**.

Definitions:

8. "*Bidder*" for the purpose of the Order (including the term 'tenderer', 'consultant' 'vendor' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency, branch or office controlled by such person, participating in a procurement process.

9. "*Tender*" for the purpose of the Order will include other forms of procurement, except where the context requires otherwise.

10. "*Transfer of Technology*" means dissemination and transfer of all forms of commercially usable knowledge such as transfer of know-how, skills, technical expertise, designs, processes and procedures, trade secrets, which enables the acquirer of such technology to perform activities using the transferred technology independently. (Matters of interpretation of this term shall be referred to the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade, and the interpretation of the Committee shall be final.)

11. "*Specified Transfer of Technology*" means a transfer of technology in the sectors and/ or technologies, specified in paragraph 15, occurring on or after 23.07.2020.

12. "*Bidder (or entity) from a country which shares a land border with India*" for the purpose of the Order means

- (a) An entity incorporated, established or registered in such a country; or
- (b) A subsidiary of an entity incorporated, established or registered in such a country; or
- (c) An entity substantially controlled through entities incorporated, established or registered in such a country; or
- (d) An entity whose beneficial owner is situated in such a country; or
- (e) An Indian (or other) agent of such an entity; or
- (f) A natural person who is a citizen of such a country; or

- (g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

13. *Beneficial owner* for the purposes of Para 12 (d) will be as under:

(i) In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person(s), has a controlling ownership interest or who exercises control through other means.

Explanation:-

- a. "Controlling ownership interest" means ownership of, or entitlement to, more than twenty-five per cent of shares or capital or profits of the company;
- b. "Control" shall include the right to appoint the majority of the directors or to control the management or policy decisions, including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;

(ii) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

(iii) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;

(iv) Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;

(v) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

14. "*Agent*" for the purpose of the Order is a person employed to do any act for another, or to represent another in dealings with third persons.

[Note:

- i. A person who procures and supplies finished goods from an entity from a country which shares a land border with India will, regardless of the nature of his legal or commercial relationship with the producer of the goods, be deemed to be an Agent for the purpose of this Order.
- ii. However, a bidder who only procures raw material, components etc. from an entity from a country which shares a land border with India and then manufactures or converts them into other goods will not be treated as an Agent.]

Sensitive Sectors/ Technologies (relevant only for the provisions on ToT arrangements):

15. (i) Certain sectors and technologies have been identified as sensitive from the national security point of view. The sectors listed in Schedule I to this Order are considered Category-I sensitive sectors. The sectors listed in Schedule II to this Order are considered Category-II sensitive sectors. The technologies listed in Schedule III are considered sensitive technologies.

(ii) For Category-I sensitive sectors, bidders with ToT arrangement in any technology with an entity from a country which shares a land border with India shall require registration.

(iii) For Category-II sensitive sectors, bidders with ToT arrangement in the sensitive technologies listed in Schedule III, with an entity from a country which shares a land border with India shall require registration.

(iv) In Category-II sensitive sectors, the Secretary (or an officer not below the rank of Joint Secretary to Government of India, so authorized by the Secretary) of the Ministry/ Department of the Government of India is empowered, after due consideration, to waive the requirement of registration for a particular item/ application or a class of items/ applications from the requirement of registration, even if included in Schedule III. The Ministry/ Department concerned shall intimate the Department for Promotion of Industry and Internal Trade (DPIIT) and National Security Council Secretariat (NSCS) of their decision to waive the requirement of registration. Ministries/ Departments of the Government of India are not required to consult the DPIIT/ NSCS before deciding and are only required to intimate the decision to DPIIT/ NSCS. If any point is raised by DPIIT/ NSCS, it should be considered in future procurements; ongoing procurement for which the waiver was granted need not be interrupted or altered.

16. Based on security considerations, a Ministry/ Department in a Category II sensitive sector or other Ministries/ Departments may recommend to DPIIT inclusion of any other technology in the list of sensitive technologies, either generally or for their Ministry/ Department.

Sub-contracting in works contracts

17. In works contracts, including turnkey contracts, contractors shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority. The definition of "contractor from a country which shares a land border with India" shall be as in paragraph 12 above. This shall not apply to sub-contracts already awarded on or before 23.07.2020.

[Note: Procurement of raw material, components, etc. does not constitute sub-contracting.]

Certificate regarding compliance

18. An undertaking shall be taken from bidders in the tender documents (**Annexure III**) that the extant guidelines for participation in the tenders (which should include conditions for implementation of this Order) have been complied with. If such certificate given by a bidder whose bid is accepted is found to be false, this would be a ground for debarment and further legal action in accordance with law.

Validity of registration

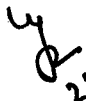
19. In respect of tenders, registration should be valid at the time of submission of bids and at the time of acceptance of bids. In respect of supply otherwise than by tender, registration should be valid at the time of placement of order. If the bidder was validly registered at the time of acceptance / placement of order, registration shall not be a relevant consideration during contract execution.

Government e-Marketplace (GeM)

20. GeM shall remove non-compliant entities from GeM unless/ until they are registered in accordance with this Order.

Model Clauses/ Certificates

21. Model Clauses and Model Certificates which may be inserted in tenders/ obtained from Bidders are given at Annexure-III. While adhering to the substance of the Order, procuring entities are free to appropriately modify the wording of these clauses based on their past experience, local needs etc.


23/02/2023
(Kanwalpreet)
Director(PPD)

Tel.No. 2309 3811; email: kanwal.irss@gov.in

To

1. Secretaries of all Ministries/ Departments of Government of India for information and necessary action. They are also requested to inform these provisions to all procuring entities.
2. Secretary, Department of Public Enterprises with a request to immediately reiterate these orders in respect to public enterprises.
3. Secretary, Department of Financial Services with a request to immediately reiterate these orders in respect to public sector and public sector financial institutions.
4. Secretary DPIIT with a request to take action as provided under Annexure I.
5. Chief Secretaries/ Administrators of Union Territories/ National Capital Territory of Delhi.
6. CEO/ GeM with a request to ensure implementation of this order on GeM.

List of Category-I Sensitive sectors:

Sr.No.	Sector
(i)	Atomic Energy
(ii)	Broadcasting/ Print and Digital Media
(iii)	Defence
(iv)	Space
(v)	Telecommunications

List of Category-II Sensitive sectors:

Sr.No.	Sector
(i)	Power and Energy (including exploration/ generation/ transmission/ distribution/ pipeline)
(ii)	Banking and Finance including Insurance
(iii)	Civil Aviation
(iv)	Construction of ports and dams & river valley projects
(v)	Electronics and Microelectronics
(vi)	Meteorology and Ocean Observation
(vii)	Mining and extraction (including deep sea projects)
(viii)	Railways
(ix)	Pharmaceuticals & Medical Devices
(x)	Agriculture
(xi)	Health
(xii)	Urban Transportation

List of Sensitive Technologies:

Sr.No.	Sensitive Technologies
(i)	Additive Manufacturing (e.g. 3D Printing)
(ii)	Any equipment having electronic programmable components or autonomous systems (e.g. SCADA systems)
(iii)	Any technology used for uploading and streaming of data including broadcasting, satellite communication etc.
(iv)	Chemical Technologies
(v)	Biotechnologies including Genetic Engineering and Biological Technologies
(vi)	Information and Communication Technologies
(vii)	Software

Competent Authority and Procedure for Registration

- A. The Competent Authority for the purpose of registration under this order shall be/ continue to be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT)*. [This Committee was already constituted under Order (Public Procurement) No.1].
- B. The Registration Committee shall have the following members*:
- i. An officer, not below the rank of Joint Secretary, designated for this purpose by DPIIT, who shall be the Chairman;
 - ii. Officers (ordinarily not below the rank of Joint Secretary) representing the Ministry of Home Affairs, Ministry of External Affairs, and of those Departments whose sectors are covered by applications under consideration;
 - iii. Any other officer whose presence is deemed necessary by the Chairman of the Committee.
 - iv. With effect from 01.04.2023, an officer (ordinarily not below the rank of Joint Secretary) representing the National Security Council Secretariat.
- C. DPIIT shall lay down the method of application, format etc. for such bidders as covered by the Order.
- D. On receipt of an application seeking registration from a bidder covered by Para 2 and 3 of this order, the Competent Authority shall first seek political and security clearances from the Ministry of External Affairs and Ministry of Home Affairs, as per guidelines issued from time to time. Registration shall not be given unless political and security clearance have both been received.
- E. The Ministry of External Affairs and Ministry of Home Affairs may issue guidelines for internal use regarding the procedure for scrutiny of such applications by them.
- F. The decision of the Competent Authority, to register such bidder may be for all kinds of tenders or for a specified type(s) of goods or services, and may be for a specified or unspecified duration of time, as deemed fit. The decision of the Competent Authority shall be final.
- G. Registration granted by the Competent Authority of the Government of India shall be valid not only for procurement by the Central Government and its bodies specified in para 6 of this order, but also for procurement by State Governments and their agencies/ public enterprises etc. No fresh registration at the State level shall be required.
- H. The Competent Authority is empowered to cancel the registration already granted if it determines that there is sufficient cause. Such cancellation by itself, however, will

not affect the execution of contracts already awarded. Pending cancellation, it may also suspend the registration of a bidder, and the bidder shall not be eligible to bid in any further tenders during the period of suspension.

- I. For national security reasons, the Competent Authority shall not be required to give reasons for rejection/cancellation of registration of a bidder.

[*Note:

(i) In respect of application of the Order to procurement by/ under State Governments, all functions assigned to DPIIT shall be carried out by the State Government concerned through a specific department or authority designated by it. The composition of the Registration Committee shall be as decided by the State Government. However, the requirement of political and security clearance as per para D shall remain and no registration shall be granted without such clearance.

(ii) Registration granted by State Governments shall be valid only for procurement by the State Government and its agencies/ public enterprises etc. and shall not be valid for procurement in other states or by the Government of India and their agencies/ public enterprises etc.]

Special Cases

- A. In projects which receive international funding with the approval of the Department of Economic Affairs (DEA), Ministry of Finance, the procurement guidelines applicable to the project shall normally be followed, notwithstanding anything contained in this order and without reference to the Competent Authority. Exceptions to this shall be decided in consultation with DEA.
- B. This order shall not apply to procurement by Indian missions and by offices of government agencies/ undertakings located outside India.
- C. This order will not apply to bidders (or entities) from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects. Updated lists of countries to which lines of credit have been extended or in which development projects are undertaken are given on the website of the Ministry of External Affairs.
- D. Procurement of spare parts and other essential service support like Annual Maintenance Contract (AMC)/ Comprehensive Maintenance Contract (CMC), including consumables for closed systems, from Original Equipment Manufacturers (OEMs) or their authorized agents, shall be exempted from the requirement of registration.

Model Clause/ Certificate/ Undertaking to be inserted in tenders etc.

[While adhering to the substance of the Order, procuring entities and GeM are free to appropriately modify the wording of the clause/ certificate based on their past experience, local needs etc.

The conditions relating to specified ToT (as shown in italics) should be incorporated only in the tenders which attract the restrictions due to specified ToT.]

A. Model Clauses for Tenders (including tenders issued manually or any electronic portal including GeM):

I. Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority. *Further, any bidder (including bidder from India) having specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India, shall also require to be registered with the same competent authority.*

II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

III. "Bidder (or entity) from a country which shares a land border with India" for the purpose of this Order means: -

- (a) An entity incorporated, established or registered in such a country; or
- (b) A subsidiary of an entity incorporated, established or registered in such a country; or
- (c) An entity substantially controlled through entities incorporated, established or registered in such a country; or
- (d) An entity whose beneficial owner is situated in such a country; or
- (e) An Indian (or other) agent of such an entity; or
- (f) A natural person who is a citizen of such a country; or
- (g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

IV. The beneficial owner for the purpose of (iii) above will be as under:

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation—

a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company;

b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;

2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;

4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;

5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

VI. [To be inserted in tenders for Works contracts, including Turnkey contracts] The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

VII. The registration shall be valid at the time of submission of bid and at the time of acceptance of bid.

VIII. If the bidder was validly registered at the time of acceptance / placement of order, registration shall not be a relevant consideration during contract execution

Model Certificate for Tenders:

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

Model Certificate for Tenders for Works involving possibility of sub-contracting:

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any

work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

Model additional certificate by Bidders in the cases of specified ToT:

"I have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. I certify that this bidder does not have any ToT arrangement requiring registration with the competent authority."

OR

"I have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. I certify that this bidder has valid registration to participate in this procurement."

B. Model Certificate for GeM (to be taken by the GeM from seller during registration on GeM. GeM should also obtain this certificate from all existing bidders as soon as possible):

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this vendor/ bidder is not from such a country and does not have any specified Transfer of Technology (ToT) from such a country or, if from such a country or if having specified ToT from such a country has been registered with the Competent Authority. I hereby certify that this vendor/ bidder fulfills all requirements in this regard and is eligible to be considered for procurement on GeM. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"



Fraud Prevention Policy

The contractor along with their associate /collaborator /sub-contractors /sub-vendors /consultants [service providers shall strictly adhere to the Fraud Prevention Policy of DVC. The Contractor along with their associate [collaborator /sub-contractors /sub-vendors /consultants /service providers shall observe the highest standard of ethics and shall not indulge or allow anybody else working in their organisation to indulge in fraudulent activities during execution of the contract. The contractor shall immediately apprise the Employer about any fraud or suspected fraud as soon as it comes to their notice.

POLICY OBJECTIVES:

The "Fraud Prevention Policy" has been framed to provide a system for detection and prevention of fraud, reporting of any fraud that is detected or suspected and fair dealing of matters pertaining to fraud. The policy will ensure and provide for the following:

- (i) To ensure that management is aware of its responsibilities for detection and prevention of fraud and for establishing procedures for preventing fraud and/or detecting fraud when it occurs.
- (ii) To provide a clear guidance to employees and others dealing with DVC forbidding them from involvement in any fraudulent activity and the action to be taken by them where they suspect any fraudulent activity.
- (iii) To conduct investigations into fraudulent activities.
- (iv) To provide assurances that any and all suspected fraudulent activity will be fully investigated.

SCOPE OF POLICY:

The policy applies to any fraud, or suspected fraud involving employees of DVC as well as representatives of vendors, suppliers, contractors, consultants, service providers or any outside agency(ies) doing any type of business with DVC.

DEFINITION OF FRAUD.

As per Section 447 of the Companies Act, 2013, "Fraud" in relation to affairs of a company or anybody corporate, includes any act, omission, concealment of any fact or abuse of position committed by any person or any other person with the connivance in any manner, with intent to deceive, to gain undue advantage from, or to injure the interests of, the company or its shareholders or its creditors or any other person, whether or not there is any wrongful gain or wrongful loss. "Wrongful gain" means the gain by unlawful means of property to which the person gaining is not legally entitled. "Wrongful loss" means the loss by unlawful means of property to which the person losing is legally entitled.



ACTIONS CONSTITUTING FRAUD.

While fraudulent activity could have a very wide range of coverage, the following are some of the act(s), which constitute fraud.

The list given below is only illustrative and not exhaustive:

- (i) Forgery or alteration of any document or account belonging to the Company
- (ii) Forgery or alteration of cheque, bank draft or any other financial instrument etc.
- (iii) Misappropriation of funds, securities, supplies or others assets by fraudulent means etc.
- (iv) Falsifying records such as pay-rolls, removing the documents from files and [or replacing it by a fraudulent note etc.
- (v) Wilful suppression of facts/deception in matters of appointment, placements, submission of reports, tender committee recommendations etc. as a result of which a wrongful gain(s) is made to one and wrongful loss(s) is caused to the others.
- (vi) Utilizing Company funds for personal purposes.
- (vii) Authorizing or receiving payments for goods not supplied or services not rendered.
- (viii) Destruction, disposition, removal of records or any other assets of the Company with an ulterior motive to manipulate and misrepresent the facts so as to create suspicion/suppression/cheating as a result of which objective assessment/decision would not be arrived at.
- (ix) Any other act that falls under the gamut of fraudulent activity.

REPORTING OF FRAUD:

Any employee of DVC, representative of vendors, suppliers, contractors, consultants, service providers or any other agency(ies) doing any type of business with DVC as soon as he / she comes to know of any fraud or suspected fraud or any other fraudulent activity must report such incident(s). Such reporting shall be made to the designated Nodal Officer(s), nominated in every project/Corporate Office. The reporting of the fraud normally should be in writing. In case the reporter is not willing to furnish a written statement of fraud but is in a position to give sequential and specific transaction of fraud/suspected fraud, then the Nodal Officer should record such details in writing as narrated by the reporter and also maintain the details about the identity of the official / employee / other person reporting such incident. Reports can be made in confidence and the person to whom the fraud or suspected fraud has been reported must maintain the confidentiality with respect to the reporter and such matter should under no circumstances be discussed with any unauthorised person.



INVESTIGATION PROCEDURE:

- (i) The "Nodal Officer" shall, refer the details of the Fraud/suspected fraud to the Vigilance Department of DVC, for further appropriate investigation and needful action.
- (ii) This input would be in addition to the intelligence, information and investigation of cases of fraud being investigated by the Vigilance Deptt. of their own as part of their day to day functioning.
- (iii) After completion of the investigation, due & appropriate action, which could include administrative action, disciplinary action, civil or criminal action or closure of the matter (if it is proved that fraud is not committed etc.) depending upon the outcome of the investigation shall be undertaken under the relevant rules of DVC.
- (iv) Vigilance Department shall apprise "Nodal Officer" of the results of the investigation undertaken by them. There shall be constant coordination maintained between the two.

RESPONSIBILITY FOR FRAUD PREVENTION.

Every employee of DVC, representative of vendors, suppliers, contractors, consultants, service providers or any other agency(ies) doing any type of business with DVC, is expected and shall be responsible to ensure that there is no fraudulent act being committed in their areas of responsibility/control. As soon as it is learnt that a fraud or suspected fraud has taken or is likely to take place they should immediately apprise the same to the concerned as per the procedure.

REVIEW OF THE POLICY:

The policy will be reviewed and revised as and when needed with the approval of Chairman, DVC.



Fraud Prevention Policy

The contractor along with their associate /collaborator /sub-contractors /sub-vendors /consultants [service providers shall strictly adhere to the Fraud Prevention Policy of DVC. The Contractor along with their associate [collaborator /sub-contractors /sub-vendors /consultants /service providers shall observe the highest standard of ethics and shall not indulge or allow anybody else working in their organisation to indulge in fraudulent activities during execution of the contract. The contractor shall immediately apprise the Employer about any fraud or suspected fraud as soon as it comes to their notice.

POLICY OBJECTIVES:

The "Fraud Prevention Policy" has been framed to provide a system for detection and prevention of fraud, reporting of any fraud that is detected or suspected and fair dealing of matters pertaining to fraud. The policy will ensure and provide for the following:

- (i) To ensure that management is aware of its responsibilities for detection and prevention of fraud and for establishing procedures for preventing fraud and/or detecting fraud when it occurs.
- (ii) To provide a clear guidance to employees and others dealing with DVC forbidding them from involvement in any fraudulent activity and the action to be taken by them where they suspect any fraudulent activity.
- (iii) To conduct investigations into fraudulent activities.
- (iv) To provide assurances that any and all suspected fraudulent activity will be fully investigated.

SCOPE OF POLICY:

The policy applies to any fraud, or suspected fraud involving employees of DVC as well as representatives of vendors, suppliers, contractors, consultants, service providers or any outside agency(ies) doing any type of business with DVC.

DEFINITION OF FRAUD.

As per Section 447 of the Companies Act, 2013, "Fraud" in relation to affairs of a company or anybody corporate, includes any act, omission, concealment of any fact or abuse of position committed by any person or any other person with the connivance in any manner, with intent to deceive, to gain undue advantage from, or to injure the interests of, the company or its shareholders or its creditors or any other person, whether or not there is any wrongful gain or wrongful loss. "Wrongful gain" means the gain by unlawful means of property to which the person gaining is not legally entitled. "Wrongful loss" means the loss by unlawful means of property to which the person losing is legally entitled.



ACTIONS CONSTITUTING FRAUD.

While fraudulent activity could have a very wide range of coverage, the following are some of the act(s), which constitute fraud.

The list given below is only illustrative and not exhaustive:

- (i) Forgery or alteration of any document or account belonging to the Company
- (ii) Forgery or alteration of cheque, bank draft or any other financial instrument etc.
- (iii) Misappropriation of funds, securities, supplies or others assets by fraudulent means etc.
- (iv) Falsifying records such as pay-rolls, removing the documents from files and [or replacing it by a fraudulent note etc.
- (v) Wilful suppression of facts/deception in matters of appointment, placements, submission of reports, tender committee recommendations etc. as a result of which a wrongful gain(s) is made to one and wrongful loss(s) is caused to the others.
- (vi) Utilizing Company funds for personal purposes.
- (vii) Authorizing or receiving payments for goods not supplied or services not rendered.
- (viii) Destruction, disposition, removal of records or any other assets of the Company with an ulterior motive to manipulate and misrepresent the facts so as to create suspicion/suppression/cheating as a result of which objective assessment/decision would not be arrived at.
- (ix) Any other act that falls under the gamut of fraudulent activity.

REPORTING OF FRAUD:

Any employee of DVC, representative of vendors, suppliers, contractors, consultants, service providers or any other agency(ies) doing any type of business with DVC as soon as he / she comes to know of any fraud or suspected fraud or any other fraudulent activity must report such incident(s). Such reporting shall be made to the designated Nodal Officer(s), nominated in every project/Corporate Office. The reporting of the fraud normally should be in writing. In case the reporter is not willing to furnish a written statement of fraud but is in a position to give sequential and specific transaction of fraud/suspected fraud, then the Nodal Officer should record such details in writing as narrated by the reporter and also maintain the details about the identity of the official / employee / other person reporting such incident. Reports can be made in confidence and the person to whom the fraud or suspected fraud has been reported must maintain the confidentiality with respect to the reporter and such matter should under no circumstances be discussed with any unauthorised person.



INVESTIGATION PROCEDURE:

- (i) The "Nodal Officer" shall, refer the details of the Fraud/suspected fraud to the Vigilance Department of DVC, for further appropriate investigation and needful action.
- (ii) This input would be in addition to the intelligence, information and investigation of cases of fraud being investigated by the Vigilance Deptt. of their own as part of their day to day functioning.
- (iii) After completion of the investigation, due & appropriate action, which could include administrative action, disciplinary action, civil or criminal action or closure of the matter (if it is proved that fraud is not committed etc.) depending upon the outcome of the investigation shall be undertaken under the relevant rules of DVC.
- (iv) Vigilance Department shall apprise "Nodal Officer" of the results of the investigation undertaken by them. There shall be constant coordination maintained between the two.

RESPONSIBILITY FOR FRAUD PREVENTION.

Every employee of DVC, representative of vendors, suppliers, contractors, consultants, service providers or any other agency(ies) doing any type of business with DVC, is expected and shall be responsible to ensure that there is no fraudulent act being committed in their areas of responsibility/control. As soon as it is learnt that a fraud or suspected fraud has taken or is likely to take place they should immediately apprise the same to the concerned as per the procedure.

REVIEW OF THE POLICY:

The policy will be reviewed and revised as and when needed with the approval of Chairman, DVC.

Damodar Valley Corporation

Established by the ACT XIV of 1948



BIDDING DOCUMENTS

FOR

EPC PACKAGE

FOR

**KODERMA THERMAL POWER STATION PHASE-II
(2x800MW)**

BOOK 1 OF 3

BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS (2X800 MW)/EPC/IPHB

Damodar Valley Corporation

Established by the ACT XIV of 1948



BIDDING DOCUMENTS

FOR

EPC PACKAGE

FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

BOOK 1 OF 3

BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS(2X800 MW)/EPC/IPHB

(This document is meant for the exclusive purpose of bidding against this Bid Document No. / Specification and shall not be reproduced or otherwise used for purposes other than that for which it is specifically issued).

TABLE OF FORMS AND PROCEDURES

Sl.No.	Description
1.	(i) Bid Form (Techno-Commercial Bid) along with Attachments [enclosed as Section-VII, Book 1 of 3]

BIDDER MAY TAKE NOTE OF THE FOLLOWING POINTS WHILE SUBMITTING ITS BID

- * BIDDERS ARE REQUIRED TO FURNISH REQUISITE DETAILS IN THE FORMATS SPECIFIED IN THE BIDDING DOCUMENTS FOR MEETING THE STIPULATED QUALIFYING REQUIREMENTS (QR) ALONG WITH ALL SUPPORTING DOCUMENTS LIKE COPIES OF CLIENT'S CERTIFICATES, WORK ORDER AND CONTRACT AGREEMENTS ETC. DULY CERTIFIED AND VERIFIED FOR AUTHENTICITY FROM INDEPENDENT STATUTORY AUDITOR OF THEIR COMPANY OR SPECIFIED THIRD-PARTY INSPECTION AGENCY.

IF ANY OF THE REFERENCE WORKS FURNISHED BY BIDDER PERTAINS TO THE CONTRACT(S)/WORKS EXECUTED BY BIDDER FOR NTPC/Employer IN THE PAST THEN IN RESPECT OF SUCH CONTRACT(S)/WORKS, BIDDER IS NOT REQUIRED TO ENCLOSE CLIENT'S CERTIFICATE(S) ALONG WITH ITS BID.
- * IN CASE OF EXTENSION OF TECHNO-COMMERCIAL BID OPENING DATE, BIDDER TO FURNISH AUDITED ANNUAL REPORTS ALONG WITH ITS BID AS PER EXTENDED DATE OF TECHNO-COMMERCIAL BID OPENING TO MEET THE STIPULATED FINANCIAL QR CRITERIA.
- * POWER OF ATTORNEY DULY NOTARIZED BY A NOTARY PUBLIC INDICATING THAT THE PERSON(S) SIGNING THE BID HAS/HAVE THE AUTHORITY TO SIGN THE BID AND THE BID IS BINDING UPON THE BIDDER DURING THE FULL PERIOD OF ITS VALIDITY BACKED BY A COPY OF BOARD RESOLUTION/OTHER RELEVANT DOCUMENTS TO DEMONSTRATE THE AUTHORITY OF THE PERSON ISSUING THE POWER OF ATTORNEY TO BE FURNISHED ALONG WITH THE BID.
- * POWER OF ATTORNEY TO THE AUTHORISED SIGNATORY OF THE BIDDER FOR SIGNING OF BID AND DJU/JV AGREEMENT ETC., WHEREVER APPLICABLE, TO BE SUBMITTED ALONG WITH BID AND SHOULD BE DATED NOT LATER THAN THE DATE OF SIGNING THE BID.
- * BIDDER TO ENSURE THAT BID SECURITY/INTEGRITY PACT/DJU/JV AGREEMENT TO BE SUBMITTED IN ORIGINAL STRICTLY AS PER SPECIFIED FORMATS DULY SIGNED IN ORIGINAL BY AUTHORIZED SIGNATORY AND STAMPED ON EACH PAGE. SCANNED /PHOTOCOPY OF THESE ORIGINAL DOCUMENTS WITHOUT SIGNATURE IN ORIGINAL SHALL NOT BE ACCEPTABLE AND SHALL BE SUMMARILY REJECTED.
- * DATE OF PURCHASE OF STAMP PAPER OF INSTRUMENTS LIKE BID SECURITY, DEED OF JOINT UNDERTAKING ETC SHOULD BE ON OR BEFORE THE DATE OF EXECUTION OF SUCH INSTRUMENTS. IN CASE SUCH INSTRUMENTS HAVE BEEN EXECUTED OUTSIDE INDIA, THE SAME SHOULD BE PROPERLY ADJUDICATED AS PER SECTION 18 OF STAMP ACT.

BID FORM

ENVELOPE- I & II
(TECHNO-COMMERCIAL BID)

BID FORM: Envelope-II (Techno-Commercial) Bid

Proposal Ref. No.

Date:

IFB No.....

 Name of Package : **EPC Package for KODERMA THERMAL POWER STATION (2x800 MW)**
Bidding Document No. : DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

To

 Damodar Valley Corporation,
 (Established by the ACT XIV of 1948)
 Chief Engineer, C&M Department,
 3rd Floor, DVC Towers, VIP Road,
 Kolkata, West Bengal

Gentlemen and/or Ladies,

1.0 Having examined the Bidding Documents No. DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB, including subsequent amendments and clarifications....., if any (Insert Numbers), the receipt of which is hereby acknowledged, we the undersigned, offer to design, manufacture, test, deliver, construct, install and commission (including carrying out Guarantee Test) the facilities under the above-named Package in full conformity with the said Bidding Documents and hereby furnish our Techno- Commercial Bid.

1.1 We have read the ITB clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries. We certify that we/our Collaborator/JV Partner/Consortium member are/is not from such a country or, if from such a country, have/has been registered with the Competent Authority and we will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

*Further, we certify that we do not have any Transfer of Technology (TOT) arrangement requiring registration with the competent authority.

Or

*Further, we certify that we have valid registration for Transfer of Technology (TOT) arrangement with the competent authority to participate in this procurement.

We hereby certify that we fulfill all requirements in this regard and are eligible to be considered.

***We further confirm that evidence of valid registration by the Competent Authority for us/our Collaborator/JV Partner/Consortium member, as applicable, is enclosed as Annexure... **.... to Bid.**

***Bidder to strike-off, if not applicable.**

****Bidder to mention the Annexure no.**

2.0 COMPLIANCE TO THE PROVISIONS OF THE BIDDING DOCUMENTS

3.1 We have read all the provisions of the Bidding Documents and confirm that notwithstanding anything stated elsewhere in our bid to the contrary, the provisions of the Bidding Documents, are acceptable to us and we further confirm that we have not taken any deviation to the provisions of the Bidding Documents anywhere in our bid.

Any deviation, variation or additional condition etc. or any mention, contrary to the provisions of Bidding Documents and its subsequent Amendment(s)/

Clarification(s)/Addenda/Errata (if any) found anywhere in our bid proposal, implicit or explicit shall stand unconditionally withdrawn, without any cost implication whatsoever to the Employer, failing which our bid shall be rejected and our Bid Security shall be forfeited.

- 3.2 We further declare that additional conditions, variations, deviations, if any, found anywhere in the proposal, shall not be given effect to.
- 3.0 We undertake, if our bid is accepted, to commence work on the Facilities immediately upon your Notification of Award to us and to achieve Completion of Facilities and conduct Guarantee Tests within the time specified in the Bidding Documents.
- 4.0 We undertake, if our bid is accepted, to first, commence work on establishing base in India for manufacturing of Supercritical Steam Generator Set and Supercritical Steam Turbine Generator Set and second, to transfer technology for manufacturing Supercritical Steam Generator Set and Supercritical Steam Turbine Generator Set from Technology provider(s) to Indian Manufacturing Company(ies) in line with Clause No. 3.0.0 under BDS Item 4.0. **An undertaking in this regard supported by Board Resolution of our and/or our Associate's (as applicable) company for manufacturing of Supercritical Steam Generator Sets and Super Critical Steam Turbine Generator Sets is enclosed at Attachment-18 of this Bid Form.**
- 5.0 If our bid is accepted, we undertake to provide Advance Payment Security, Contract Performance Security, Performance Security for Phased Manufacturing Program and Securities for Deed(s) of Joint Undertaking (as applicable) in the forms and amounts and within the time specified in the Bidding Documents.
- 6.0 Until a formal Contract is prepared and executed between us, this bid, together with your written acceptance thereof in the form of your Notification of Award shall constitute a binding contract between us.
- 7.0 We understand that you are not bound to accept the lowest or any other bid you may receive.
- 8.0 We, hereby, declare that only the persons or firms interested in this proposal as principals are named here and that no other persons or firms other than those mentioned herein have any interest in this proposal or in the Contract to be entered into, if the award is made on us, that this proposal is made without any connection with any other person, firm or party likewise submitting a proposal, is in all respects for and in good faith, without collusion or fraud.
- 9.0 (i) *We confirm that we fulfill the requirements of Local content for Class-I local supplier.*

The details of the location(s) at which the local value addition is made are as under:

Sl. No.	Description of Goods & Services	Details of the location(s) at which the local value addition is

Bidder may also enclose additional sheets in similar format (if required), for providing details pertaining to local value addition.

(ii) We confirm that we fulfill the requirements of Local content for Class-I local supplier for Item(s) mentioned at clause no. 40.00.00 of GTR in Technical Specifications, as

applicable. We further confirm that in case such item(s) are bought-out for us, we shall source the same from Class-I local supplier only.

We undertake that a certificate from the statutory auditor or cost auditor (in the case the bidder is a company) or from a practicing cost accountant or practicing chartered accountant (in respect of bidders other than companies) certifying the percentage of local content shall be submitted by us prior to submission of our last bill for payment.

We further confirm that we are presently not debarred / banned by any other procuring entity for violation of 'Public Procurement (Preference to Make in India), Order 2017' (PPP-MII Order) dated 15.06.2017 and its subsequent revisions / amendments issued by Department for Promotion of Industry and Internal Trade (DPIIT).

(In case a Bidder has been banned/debarred by any other procuring entity for violation of 'Public Procurement (Preference to Make In India), Order 2017' (PPP- MII Order) dated 15.06.2017 and its subsequent revisions / amendments issued by Department for Promotion of Industry and Internal Trade (DPIIT), the same may be declared by Bidder by striking off para above and declaring the details of banning using additional sheets.)

- 10.0 We further confirm that we have quoted the local content portion of our bid price in Indian Rupees only. We undertake that the certification from the statutory auditor or cost auditor (in the case the bidder is a company) or from a practicing cost accountant or practicing chartered accountant (in respect of bidders other than companies) in this regard shall be submitted by us prior to submission of our last bill for payment.

Dated this.....day of. 20.....

Thanking you, we remain,

Date	:	Yours faithfully, (Signature).....
Place	:	(Printed Name)..... (Designation)..... (Common Seal).....

Business Address:

Country of Incorporation (Province also to be indicated):

Fax No. :

Phone No. :

Email ID :

Note: 1. Bidders may note that no prescribed proforma has been enclosed for:

- (a) Attachment 2 (Power of Attorney)
- (b) Attachment 4, (For documentary evidence establishing that the facilities offered are eligible facility and conform to bidding documents.)

For Attachments 2 and 4, Bidders may use their own proforma for furnishing the required information with the Bid.

**EPC PACKAGE
FOR**

KODERMA THERMAL POWER STATION PHASE-II (2x800 MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

BID SECURITY

**BIDDER TO FURNISH BID SECURITY IN LINE WITH
ITB CLAUSE 12.0 AND AS PER FORMAT GIVEN AT
SL. NO. 2 OF SECTION VII (FORMS & PROCEDURES)**

**EPC PACKAGE
FOR**

KODERMA THERMAL POWER STATION PHASE-II (2x800 MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

TENDER FEE

**BIDDER TO FURNISH TENDER FEE
IN LINE WITH
ITB CLAUSE 8.0**

**EPC PACKAGE
FOR**

**KODERMA THERMAL POWER STATION PHASE-II (2x800 MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

POWER OF ATTORNEY

**{TO BE ENCLOSED AS PER CLAUSE 2.0 (b) OF BID FORM ENVELOPE-I
(TECHNO-COMMERCIAL) BID}**

**BIDDER TO ATTACH THE POWER OF ATTORNEY INDICATING THAT
THE PERSON(S) SIGNING THE BID HAS/HAVE THE AUTHORITY TO
SIGN BOTH THE BID [TECHNO-COMMERCIAL BID AND PRICE BID]
AND THAT THE BID IS BINDING UPON THE BIDDER DURING THE FULL
PERIOD OF ITS VALIDITY IN ACCORDANCE WITH ITB CLAUSE 13**

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800 MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB
(Qualification Data)**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department, 3rd
Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

Dear Sirs,

We seek qualification under Clause 8.1.2 (a) of Section ITB and Item No. 4.0 of Bid Data Sheets and our qualification data in support thereof is enclosed vide following Attachments:

1.	Attachment 3A to 3A15:	Experience Details of Bidder, and Certificate of Compliance on Qualifying Requirements
2.	Attachment 3B :	Details of Financial Capacity Status
3.	Attachment 3C :	Details of Design, Engineering, Manufacturing and Testing Capabilities
4.	Attachment 3D :	Details of Manufacturing Capacities & Plant Loading
5.	Attachment 3E :	Present Order Book Position
6.	Attachment 3F :	Past Performance Data
7.	Attachment 3G :	Data regarding Key Construction Personnel
8.	Attachment 3H :	Manpower Loading Data
9.	Attachment 3I :	Deed(s) of Joint Undertaking (if applicable)
10.	Attachment 3J :	Details regarding Project Management Organization
11.	Attachment 3K : Specifications]	Provenness criteria [as per Part-A, Section-VI (Technical

We further understand and agree that any misleading or false information furnished by us may result in summary rejection of our bid.

Date :	(Signature).....
Place :	(Printed name).....
	(Designation).....
	(Common Seal).....

Note: i) The Bidder shall enclose relevant documents like copies of authentic purchase orders, completion certificates, agreements, etc. supporting the details/data provided in Attachment-3A to 3K.

ii) Strike out whichever is not applicable.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800 MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

[Experience details of Bidder as per Note No. 13 for clause no. 01.0.0 of Item No. 4 of BDS]

Bidder's Name and Address:

To

Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

1.0.0 We, M/s.....(Name of Bidder) are seeking qualification through Route*1.1.0/*1.2.0/*1.3.0/*1.4.0/*1.5.0The details are as follows:

1.1.0 We confirm that we /our Indian *Subsidiary Company/*JV Company/*Indian Manufacturing Company have manufactured / supplied in India Eight (8) Nos. supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be), which are in commercial operation (achieved COD) out of which four (4) such Steam Generators and/or Steam Turbine Generators (as the case may be), are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Generators and/or Steam Turbine Generators(as the case may be) prior to the date of techno-commercial bid opening, as per Note No. 13 to clause no. 01.0.0 of Item no. 4 of BDS.

1.2.0 We confirm that in case any problem related to supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be)& Auxiliaries is encountered during execution of the contract, we shall resolve the same within a reasonable time (in the opinion of the owner) by ourself/through the collaborator/through firm having competency to resolve such issues. If the problem is not resolved within a reasonable period of time in the opinion of the owner, Owner shall have the option to approach directly to the collaborator/licensor/technology Provider or any other firm to resolve the issue. In such a case the financial expenditure(s) incurred by Owner for resolution of such issues will be to our account. Accordingly, we are submitting a letter at Annexure of the techno commercial bid valid up to the end of defect liability period of the contract, as per the format enclosed in the bidding documents.

The details are furnished as below: -

***Supercritical Steam Generators details:**

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.00.00	Name and location of the reference Station in which the unit is located								
1.1.0	Name, address, email, Tel. no. and Fax of owner of the station								
1.1.1	Name and Designation of the responsible person in owner's organisation								
1.1.2	Capacity of Steam Generator Unit in MW								
1.1.3	Contract No. & Date								
1.1.4	Starting date of project								
1.1.5	Scheduled date of Commissioning								
1.1.6	Actual date of Commissioning								
1.1.7	Date of commencement of successful operation								
1.1.8	Date of commencement of Commercial operation(COD)								
1.1.9	Whether the Steam Generator is supercritical	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.1.10	Scope of work executed by *us / *our Indian *Subsidiary Company/*JV Company/*Indian Manufacturing Company:								
	a) Manufactured	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
	b) Supplied	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.0	Certificate from the RLDC/SLDC of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set has successfully completed								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.3	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment								
Details of Steam Generator									
2.00.00	Name and Address of Steam Generator Set manufacturer								
2.01.00	Steam Generator steamflow capacity at SH outlet(T/Hr.)								
2.02.00	Main Steam Temperature at SH outlet(⁰ C)								
2.03.00	Main Steam Pressure at SH outlet [kg/cm ² /(a)]								
2.04.00	Reheat steamflow(T/Hr.)								
2.5.0	a) Reheater outlet pressure [kg/cm ² (a)]								
	b) Reheater outlet temperature (⁰ C)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.06.00	Whether balanced draft type or not								
2.7.0	Type of Steam Generator								
	i) Single pass(tower type)or two pass type								
	ii) Once through type	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
2.08.00	Type of circulation system (Natural or Forced Circulation)								
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled)								
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m ²)								
2.11.00	Type of coal used								
	i) Max. HHV(Kcal/Kg)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	ii) Min. HHV(Kcal/Kg)								
	iii) Max. Ash content(%)								
	iv) Max. total moisture content(%)								
	v) Volatile matter content(%)								
2.11.1	Type of oil used								
	i) HHV(Kcal/Kg)								
	ii) Sulphur content(%)								
	iii) Viscosity in centistoke at 50°C(Max.°C)								
	iv) Pour point(°C)								
	v) Flash point(°C)								
2.12.0	Fuel (other than pulverised coal fired)								
2.12.1	Type of fuel used								
2.12.2	Firing rate								
2.12.3	Calorific value of fuel(Kcal/kg)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.13.00	Designed Boiler efficiency and corresponding GCV								
2.14.00	Tested boiler efficiency and corresponding GCV								
2.15.00	Tested boiler efficiency corrected to design conditions and corresponding GCV								
2.16.00	a) Whether used for two shifting								
	b) If yes, number of such operations it has been designed for								
	c) No. of actual two shifting cycles it has actually operated on till date								
2.17.0	Minimum start-up time achieved								
	i) Cold (after 72 hrs. of unit shutdown)								
	ii) Warm (after 36 hrs. of unit shutdown)								
	iii) Hot (after 8 hrs. of unit shutdown)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.18.00	Availabilities of steam generator for last two years								
2.19.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators								

****Supercritical Steam Turbine Generators details***

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.00.00	Name and location of the reference Station in which the unit is located								
1.1.0	Name, address, email, Tel. no. and Fax of owner of the station								
1.1.1	Name and Designation of the responsible person in owner's organisation								
1.1.2	Capacity of Steam Turbine Generator Unit in MW								
1.1.3	Contract No. & Date								
1.1.4	Starting date of project								
1.1.5	Scheduled date of Commissioning								
1.1.6	Actual date of Commissioning								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.01.07	Date of commencement of successful operation								
1.01.08	Date of commencement of Commercial operation (COD)								
1.01.09	Whether the Steam Turbine Generator is supercritical Yes*/No		*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No**	Yes*/No**	Yes*/No*
1.1.10	Scope of work executed by *us / *our Indian *Subsidiary Company/*JV Company/*Indian Manufacturing Company:								
	a) Manufactured	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No**	Yes*/No**	Yes*/No*
	b) Supplied	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No**	Yes*/No**	Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No**	Yes*/No**	Yes*/No*
1.2.0	Certificate from the RLDC/SLDC of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No**	Yes*/No**	Yes*/No*
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set has successfully completed Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.3	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment								
2.00.00	Details of Turbine								
2.01.00	Steam Turbine make								
2.02.00	Tandem compound	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No*	*Yes*/No*	*Yes*/No*
2.03.00	No. of Reheat								
2.4.0	(i) No. of Cylinders:								
	(a) HP								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	(b) IP								
	(c) Combined HP-IP								
	(d) LP								
	(ii) Whether HP and IP cylinders are combined or separate								
2.5.0	Module Number								
	(a) HP Turbine								
	(b) IP Turbine								
	(c) Combined HP-IP turbine (if applicable)								
	(d) LP Turbine								
2.06.00	Main steam pressure (gauge)								
2.07.00	Main steam temperature (deg.C)								
2.08.00	Reheat Steam temperature (deg.C)								
2.09.00	Condensing type	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No*

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.10.00	Rated speed (RPM) and operating frequency range (Hz)								
2.11.00	No. of Steam Extractions								
2.12.00	Steam Turbine and Generator Directly coupled	Yes*/No*	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No**	Yes*/No**	Yes*/No*
2.13.00	Steam Turbine Generator Set Installation (Indoor / Outdoor)								
3.00.00	Generator Details								
3.01.00	Generator make and model No.								
3.02.00	Rated MVA								
3.03.00	Rated Power Factor								
3.04.00	MW rating								
3.05.00	Rated voltage (kV)								
3.06.00	No. of phases								
3.07.00	No. of poles								
3.08.00	Mounting (Horizontal / Vertical)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
3.09.00	Installation (Indoor / Outdoor)								
3.10.00	Cylindrical rotor type	Yes*/No*	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No*
3.11.0	Cooling medium								
	(a) Stator								
	(b) Rotor								
3.12.0	Thermal Class of insulation								
	(a) Stator								
	(b) Rotor								
3.13.00	Schedule date of Commissioning								
3.14.00	Actual date of commissioning								
3.15.00	Date of commencement of successful operation								
1.3.0	Documentary evidence in support Of QR data enclosed at Annexure _____.								
1.4.0	Letter valid up to the end of defect liability period of the contract, as per the format enclosed in the bidding documents is enclosed at Annexure ____ of the techno commercial bid.								

Note: For the purpose of these Qualifying Requirements, Route 1.2.0 is not used. Wherever Clause 1.2.0, 1.2.1, 1.2.2 & 1.2.3 have been referred to either directly or indirectly in the other qualification Routes/ Financial criteria, the same should be deemed to have been omitted and qualifying requirements should be read accordingly

**EPC PACKAGE
FOR**

**KODERMA THERMAL POWER STATION PHASE-II (2x800 MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(Qualification Data)

Bidder's Name and Address:

To

Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

Dear Sirs,

*I/ *We M/s (Name of bidder), hereby confirm that *I/ *we have received Employer's letter no. dated communicating that we are not required to submit the details/ documents pertaining to reference works/ plants/ past experiences, in case we seek qualification under *clause/ *route no.... of Qualifying Requirements *with the support of M/s (Name of associate/ collaborator, as applicable).... as Associate/ Collaborator *or along with M/s (Name of JV/ Consortium partner(s)) as JV/ Consortium partner(s).

We hereby confirm that *I/ *We are seeking qualification under same *clause/ *route no. of Qualifying Requirements *along with the support of M/s (Name of associate/ collaborator, as applicable) *or along with M/s (Name of JV/ Consortium partner(s))
.....

Accordingly, we are not submitting the details/ documents pertaining to reference plants / works / past experiences to meet the criteria under clause/ route no. ... of Qualifying Requirements for us as well as for our Associate/ Collaborator/JV Partner/Consortium Partner.

Date :
Place :

(Signature).....
(Printed Name).....
(Designation).....
(Common seal).....

Appendix-B to Attachment-3A

Undertaking from Independent Statutory Auditor

(On letter head digitally signed by a person duly authorized to Sign on behalf of the Statutory Auditor)

Bid Ref. No:

Date:

To,
DVC

.....

Subject: Authentication of veracity of documents submitted by M/s in support of meeting the Qualifying Requirements

Ref : IFB/Tender no.

Name of the Package/ Tender:

Dear Sir,

M/s. (hereinafter called Bidder) having Registered office at intend to participate in above referred tender of DVC We, M/s have been appointed as Statutory Auditor for the Bidder i.e. M/s (Relevant documents on our appointment attached)

The tender condition stipulates that the bidder shall submit supporting Documents pertaining to Technical Qualifying Requirement duly verified and certified by Statutory Auditor. In this regard, it is hereby confirmed that we have examined the following documents, which are also attached with this letter. The same has been verified from the Original Documents and/ or Client for authenticity.

We hereby confirm that the following documents are found to be genuine and authentic.

1. Doc ref. no. dated (name of Documents)
2. Doc ref. no. dated (name of Documents)
3.

All the aforesaid documents have been duly signed and stamped and/ or digitally signed by us as a certificate of authenticity.

*Further, we have examined the books of accounts, records, and other relevant documents, along with other necessary information and explanations furnished by M/s. (bidder) and hereby certify following:

.....

This certificate is issued at the request of M/s (Bidder) for the purpose of participating in tender/s.

Thanking you,

.....

** Strike off, whichever is not applicable.*

Appendix-C to Attachment-3A

**Undertaking from Third Party Inspection Agency
(on letter head digitally signed by a person duly authorized to Sign on behalf of the TPIA)**

Bid Ref. No:

Date:

To,
DVC

.....

Dear Sir,

Subject: Authentication of veracity of documents submitted by M/s in support of meeting the Qualifying Requirements

M/s. (hereinafter called Bidder) having Registered office at intend to participate in above referred tender of Employer

The tender condition stipulates that the bidder shall submit supporting Documents pertaining to Qualifying Requirement duly verified and certified by a specified independent Third Party Inspection Agency as per the list mentioned in the bidding documents.

In this regard, it is hereby confirmed that we have examined the following documents, which are also attached with this letter. The same has been verified from the Original Documents and / or Client for authenticity.

We hereby confirm that the following documents are found to be genuine and authentic.

1. Doc ref. no. dated (name of Documents)
2. Doc ref. no. dated (name of Documents)
3.

All the aforesaid documents has been digitally signed by us as a certificate of authenticity.

We further confirm that we neither have any vested interest in aforesaid tender nor have any conflict of interest in respect of above tender.

This certificate is issued at the request of M/s (Bidder) for the purpose of participating in the subject tender/s.

Thanking you,

.....

** Strike off, whichever is not applicable.*

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800 MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(Site Visit Certificate)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

Dear Sirs,

With reference to the subject package and as per Clause 5.2, Sec-II, ITB regarding site visit by bidder, we confirm that we have visited and examined the Koderma Thermal Power Project, site where the facilities are to be installed and its surroundings, on the date mentioned below:

DATE:

(Bidder)

(Employer Official)

(Signature)

(Signature).....

(Printed Name)

(Printed Name)

(Designation)

(Designation)

(Common Seal)

(Common Seal).....

**EPC PACKAGE
FOR**

**KODERMA THERMAL POWER STATION PHASE-II (2x800 MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

**((Experience details for Qualified Steam Generator
Manufacturer (QSGM) and / or Qualified Steam Turbine Generator
Manufacturer (QSTGM) as Bidder, as per Clause 1.1.0, Item No. 4.0 of BDS)**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

1.0.0 *We, M/s....., **(Qualified Steam Generator Manufacturer)**, are seeking Qualification as per clause 1.1.0 **[As Qualified Steam Generator Manufacturer as per clause 1.1.1(A)]**, Item No. 4 of BDS.

*We, M/s..... (QSTGM as Bidder), are associating with M/s..... (Qualified Steam Generator Manufacturer / Indian Subsidiary of Qualified Steam Generator Manufacturer / JV Company of Qualified Steam Generator Manufacturer) and shall source the Steam Generator Set from M/s..... (Associate) as per clause 1.1.2(c) item no. 4 of BDS. The details are as follows:

1.1.0 We confirm that the QSGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of at least one (1) number of pulverised coal fired supercritical Steam Generator having rated capacity of 1500 tones of steam per hour or above. Further, such Steam generator is of the type specified, i.e. single pass (tower type) or two pass type using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing, and have been in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

*Further, we confirm that reference Steam Generator is provided with evaporator suitable for variable pressure operation (sub-critical and super-critical pressure ranges). Also, we confirm that we have offered the steam generator of the same type (i.e. Single Pass or Two Pass) and having same type of water wall tubing for which reference of Steam Generator has been furnished below. The details are as follows :-

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.00.00	Name, address, e-mail, Tel. No. and Fax No. of the QSGM			
1.1.0	Name and Designation of the responsible person in QSGM			
1.1.1	Name of the reference station and its location			
1.1.2	Name, address, e-mail, Fax No. and Tel. No. of Owner of reference station			
1.1.3	Name and Designation of the responsible person in Owner's organisation			
1.2.0	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by QSGM from intermediary organisation			
1.2.1	Name and Designation of the responsible person in intermediary organisation			
1.03.00	No. of units & capacity of each unit in MW			
1.04.00	No. of steam generator sets supplied by us for the reference station			
1.05.00	Contract No. & Date			
1.06.00	Starting date of Project			

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.07.00	Scheduled date of Commissioning			
1.08.00	Actual date of Commissioning			
1.09.00	Date of commencement of successful operation			
1.10.00	Whether the Plant is pulverised coal fired	Yes*/No*	Yes*/No*	Yes*/No*
1.11.00	Scope of work executed by us for the aforesaid Steam Generator includes the following :			
a)	Designed	Yes*/No*	Yes*/No*	Yes*/No*
b)	Engineered	Yes*/No*	Yes*/No*	Yes*/No*
c)	*Manufactured/*Got manufactured	Yes*/No*	Yes*/No*	Yes*/No*
d)	*Erection/*Supervised erection/**Acted as an Advisor for erection	Yes*/No*	Yes*/No*	Yes*/No*
e)	*Commissioned/*Supervised commissioning/**Acted as an advisor for commissioning	Yes*/No*	Yes*/No*	Yes*/No*
f)	Whether the plant is in successful operation for a period of one (1) year (minimum) prior to the date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*

(**In case the QSGM has acted as advisor for erection / commissioning of reference Steam Generator & auxiliaries, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to Note No. 2 for clause no. 1.0.0 of Item 4.0 of BDS)

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.00.00	Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)			
2.01.00	Main Steam Temperature at SH outlet (°C)			
2.02.00	Main Steam Pressure at SH outlet [kg/cm ² (a)]			
2.03.00	Reheat steam flow (T/Hr.)			
2.04.00	a) Reheater outlet pressure [kg/cm ² (a)]			
	b) Reheater outlet temperature (°C)			
2.05.00	Whether balanced draft type or not			
2.06.00	Type of Steam Generator			
	i) Single pass (tower type) or two pass type (must match with offered type)			
	ii) Once through type	Yes*/No*	Yes*/No*	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*
(In case the answer to above clause (iii) is "No", in such a case, the Bidder / Associate shall furnish additional data in support of requirements indicated at Note(5) to Clause 1.0.0, Item No. 4 of BDS & detailed in Clause 1.4.0 of this Attachment.				
2.07.00	Type of Water wall tubes [spiral wound (inclined) or vertical plain or vertical rifled] [must match with offered type]			

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.08.00	Minimum mass flow through the water wall tubes Kg/sec./m ²			
2.9.0	Type of coal used			
	i) Max. HHV (Kcal/Kg)			
	ii) Min. HHV (Kcal/Kg)			
	iii) Max. Ash content (%)			
	iv) Max. total moisture content (%)			
	v) Volatile matter content (%)			
2.10.1	Type of oil used			
	i) HHV (Kcal/Kg)			
	ii) Sulphur content (%)			
	iii) Viscosity in centistoke at 50°C (Max.°C)			
	iv) Pour point (°C)			
	v) Flash point (°C)			
2.11.0	Fuel (other than pulverised coal fired)			
2.11.1	Type of fuel used			
2.11.2	Firing rate			
2.11.3	Calorific value of fuel (Kcal/kg)			

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.12.00	Designed Boiler efficiency and corresponding GCV			
2.13.00	Tested boiler efficiency and corresponding GCV			
2.14.00	Tested boiler efficiency corrected to design conditions and corresponding GCV			
2.15.00	a) Whether used for two shifting			
	b) If yes, number of such operations it has been designed for			
	c) No. of actual two shifting cycles it has actually operated on till date			
2.16.0	Minimum start-up time achieved			
	i) Cold (after 72 hrs. of unit shut down)			
	ii) Warm (after 36 hrs. of unit shut down)			
	iii) Hot (after 8 hrs. of unit shut down)			
2.17.00	Availabilities of steam generator for last two years			
2.18.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators			

Sl. No.	Item Description	Station-1	Station-2	Station-3
3.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
3.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
3.2.0	Documentary evidence in case the award for reference work (steam generator set) has been received by Bidder (QSGM) / Associate (QSGM / Indian Subsidiary / JV Company of QSGM) from *Owner of plant or any *other intermediary organization			
	(i) Certificate from *Owner of the plant or *intermediary organisation to be furnished by Bidder (QSGM) / Bidder on behalf of its Associate in support of the claim of meeting requirement of Note (3) of clause 1.0.0 item 4 of BDS as the case may be, enclosed at Annexure..... to this Attachment			
	(ii) Certificate from Owner of the plant to be furnished by Bidder (QSGM) / Bidder on behalf of its Associate for the successful operation of the Steam Generator Set as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment			

Notes :

1. Wherever the term Pulverised coal fired is appearing above, "coal" shall be deemed to also include bituminous Coal/Sub Bituminous Coal/Brown Coal/Lignite.

- 1.2.0*(a) We confirm that * we / *our Associate (QSGM) have registered an Indian Subsidiary Company M/s..... / our Associate is an Indian Subsidiary Company of M/s..... (QSGM) registered in India, as per Companies Act of India, for manufacturing **supercritical Steam Generator sets** covering the type, size and rating specified.

*Further, the Indian Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... is a subsidiary company of M/s..... (QSGM) and shall remain a subsidiary company of the QSGM for a minimum period of 7 years from the date of incorporation of this Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of Indian Subsidiary Company
1.01.00	Equity participation of QSGM in the subsidiary company (In percentage of the total equity)
1.02.00	Bidder to furnish documentary evidence regarding maintaining the subsidiary status as declared above, a Letter of Undertaking from the promotor supported by Board Resolution as per format enclosed as Attachment 3A11
2.00.00	*Equity participation of other Promoter having Equity equal to or more than 25% in Indian Subsidiary Company

S.No.	Item Description
2.01.00	*Lock in period for above equity participation from the date of incorporation.
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure _____ of this Attachment
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure _____ of this Attachment

1.2.0*(b) We confirm that *we / *our Associate (QSGM) have registered a Joint Venture (JV) Company M/s.....in India / our Associate is a Joint Venture Company of QSGM registered in India, as per Companies Act of India for manufacturing supercritical steam generator sets covering the type, size and rating specified.

The Joint Venture (JV) Company is promoted by (i) M/s....., an Indian Company registered in India under the Companies Act of India and (ii) M/s, a QSGM, who meets the requirement of clause 1.1.0 of item 4 of BDS and above details are furnished in clause 1.1.0 above.

The JV Company have obtained certificate for commencement of Business in India as on the date of Techno-Commercial bid opening, (Applicable in case, the JV Company is incorporated as a public limited Company).

We confirm that the QSGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

Further, M/s....., one of the promoters is a majority stakeholder who have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The details of the Joint Venture (JV) company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of JV Company
1.01.00	Equity participation of QSGM in the JV company (In percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish letter of undertaking as per formant enclosed at Attachment 3A11 as per Note 9 of clause 1.0.0 of Item 4 of BDS for QSGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the QSGM)
2.00.00	Equity participation of the Majority Stake Holder having Equity more than 51% in JV Company
2.01.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish letter of undertaking as per format enclosed at Attachment 3A11 as per note 9 of clause 1.0.0 of Item 4 of BDS for Majority Stake Holder's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the Majority Stake Holder)

S.No.	Item Description
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of JV company is enclosed at Annexure_____ of this Attachment

1.2.0**(b)(i) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate), is an entity other than the QSGM and is an Indian Company and has executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening. The details are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No. Tel. No. and e-mail			
1.2	Name & designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			

*Bidder to furnish 1.2.0**(b)(i) & (ii) only when his Associate is a JV Company of QSGM, as per clause no. 1.4.1(a), Item no. 4 of BDS.*

S.No.	Item Description	Project#1	Project#2	Project#3
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence is support of above are attached at Annexure..... of this Attachment			

1.2.0**(b)(ii) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate), an entity other than the QSGM, are an Indian Company. Our Associate's Parent Company M/s have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil

1.2.0**(b)(ii) is to be filled in only in **pursuance of Note 6** for clause no. 1.0.0 of Item no. 4 of BDS.

We, on behalf of our Associate, confirm that our Associate is a wholly owned subsidiary of their parent company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the Associate (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

The qualification details of the Parent Company are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No. Tel. No. and e-mail			
1.2	Name & designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			

S.No.	Item Description	Project#1	Project#2	Project#3
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			
1.13	Date of Incorporation of JV Company			
1.14	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			
1.15	Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later?	*Yes/*No	*Yes/*No	*Yes/*No
	(Bidder to furnish letter of undertaking as per format enclosed at Attachment 3A11 for equity participation of Parent Company in the wholly owned subsidiary company along with lock in period of such equity in compliance to note 6 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)			

1.2.0*(c) We confirm that M/s....., *Our / *Our Associate's Indian *Subsidiary Company/Our Associate (an Indian *Subsidiary / *JV Company), whose details are indicated at *1.2.0(a) / *1.2.0(b) above have registered another **Indian manufacturing Subsidiary Company** M/s....., as per Companies Act of India for manufacturing **supercritical steam generator sets** in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial Bid Opening (Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that the Indian manufacturing subsidiary company shall remain a subsidiary of the Indian Subsidiary / JV Company with equity for a minimum period of 7 years from the date of incorporation of this Indian manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian manufacturing Subsidiary Company are as follows :

S.No.	Item Description	
1.00.00	Date of Incorporation of Indian manufacturing Subsidiary Company	
1.01.00	Equity participation of the *Indian subsidiary / *JV company in the Indian manufacturing subsidiary company (in percentage of the total equity)	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian manufacturing subsidiary company or upto the end of defect liability period of the contract whichever is later ? (Bidder to furnish letter of undertaking as per Attachment-3A11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to note 8 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Indian *Subsidiary / *JV Company)	*Yes/*No

1.2.0*(c) is to be filled in only in pursuance of Note 8 for clause no. 1.0.0 of Item no. 4 of BDS.

S.No.	Item Description

2.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
2.01.00	Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of Indian manufacturing subsidiary company is enclosed at Annexure_____ of this Attachment

1.3.0 *We confirm that M/s....., (*Bidder / *Associate, a QSGM) is / are seeking qualification as holding company (singularly or collectively) with its subsidiaries (held directly or indirectly) as per note No. 4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

1.3.1	Bidder/Associate and their subsidiary's(ies') Experience Details in respect of meeting requirement for QSGM (as per clause 1.1.1(A)), item 4 of BDS	(To be filled at page to of this Attachment)
1.3.2	Details of Subsidiary Company/Joint Venture Company registered by Bidder / Associate in India meeting requirement of Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS	(To be filled at page to of this Attachment)
1.3.3	*Name, Address, email, Fax, Tel. No. of the Subsidiary(ies) meeting the QR for QSGM as per clause 1.1.0 of BDS	
1.3.4	*Name, address & Telephone No., Fax and e-mail of subsidiary company owning the technology for supercritical steam generators	

*We have submitted the experience details in support of Qualifying Requirement at 1.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between us / our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 1.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (Qualified Steam Generator Manufacturer) and above subsidiaries.

TO BE FILLED IN BY THE BIDDER WHO / WHOSE ASSOCIATE IS SEEKING QUALIFICATION AS PER CLAUSE 1.1.1(A), ITEM 4 OF BDS READ IN CONJUNCTION WITH NOTE 5 TO CLAUSE 1.0.0, ITEM 4 OF BDS (I.E. IF THE ANSWER TO SUB-CLAUSE 2.06.00(iii) TO CLAUSE 1.1.0 ABOVE IS "NO")

1.4.0 We, confirm that M/s _____ (supercritical Steam Generator Manufacturer) meets all the requirement as per 1.1.1(A), Item 4 of BDS **except that the evaporator** indicated in the reference steam generator is not designed for variable pressure operation and is designed for constant pressure (Universal Pressure) operation only, and is seeking qualification along with the original technology owner (Licensor) with whom he has an ongoing license agreement (which covers technology transfer), as on the date of Techno-Commercial bid opening, for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges).

Further, we confirm that original technology owner (Licensor) has experience of providing variable pressure design steam generator technology for at least one (1) no. of pulverised coal fired supercritical steam generator for a 1500 T/hr or higher capacity using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing with the evaporator suitable for variable pressure operation in sub-critical and super-critical pressure ranges and which is/are in successful operation for a period of not less than one (1) year prior to the date of **Techno-Commercial** bid opening.

We further confirm that we have offered only the type of steam generator i.e. single pass (tower type) or two pass type for which we are qualified and have offered only the type or water wall tubing (either spiral wound (inclined) or vertical plain or vertical rifled type) for which our licensor is qualified. The details of Licensor and his experience details are as follows:-

I. Details of Technology Owner (Licensor)

- 1.01.00 Name of the original technology owner (Licensor)
- 1.02.00 Address, E-mail ID & Tel No. & Fax
- 1.03.00 Name and Designation of the Responsible person in the Organization
- 1.04.00 Licensing agreement for max. Capacity rating of Steam Generator (in MW)

- 1.05.00 Date of Start of Licensing agreement
- 1.06.00 Date of End of Licensing agreement
- 1.07.00 Whether Scope of licensing agreement covers for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges). *Yes / *No
- 1.08.00 Copy of relevant portion of Licensing agreement attached at Annexure.....

II. Details of experience of Technology Owner (Licensor)

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.01.00	Name of the reference station and its location			
1.02.00	Client name and its address, Fax No. & Tel.No., email ID			
1.03.00	i) Actual date of Completion			
	ii) Date of Commencement of Successful operation			

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.04.00	Whether the Plant is in Successful operation	Yes*/No*	Yes*/No*	Yes*/No*
1.05.00	Scope of work executed for the aforesaid Steam Generator includes the following:			
	i) Designed	Yes*/No*	Yes*/No*	Yes*/No*
	ii) Engineered	Yes*/No*	Yes*/No*	Yes*/No*
	iii) Whether the plant is in successful operation for a period of one (1) year (Minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*
1.06.00	i) Supercritical Steam Generator	Yes*/No*	Yes*/No*	Yes*/No*
	ii) Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)			
1.07.00	Type of Steam Generator			
	i) Single pass (tower type) or two pass type (must match with offered type)			
	i) Once through type	Yes*/No*	Yes*/No*	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*
1.08.00	Type of Water wall tubes (Spiral wound(inclined) or vertical plain or vertical rifled) (must match with offered type)			
1.09.00	Type of firing (Pulverised Coal)	Yes*/No*	Yes*/No*	Yes*/No*

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.10.0	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
1.11.00	Undertaking w.r.t Deed of Joint Undertaking (DJU) as per performa enclosed at attachment-3I of Book 1 of 3, Sec-VII is furnished alongwith the bid at Annexure			

1.5.0* We confirm that our Associate i.e. M/s have manufactured / supplied in India Eight (8) Nos. supercritical Steam Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 of Item no. 4 of BDS. Further, we confirm that we shall offer only the type of steam generator for which our associate is qualified.

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

1.00.00 Name and location of the reference
Station in which the unit is located

1.1.0 Name, address, email, Tel. no.
and Fax of owner of the station

1.1.1 Name and Designation of the
responsible person in owner's
organisation

1.1.2 Capacity of Steam Generator
Unit in MW

1.1.3 Contract No. & Date

1.1.4 Starting date of project

1.1.5 Scheduled date of Commissioning

1.1.6 Actual date of Commissioning

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.1.7	Date of commencement of successful operation	
1.1.8	Date of commencement of Commercial operation (COD)	
1.1.9	Whether the Steam Generator is supercritical	Yes*/No*
1.1.10	Scope of work executed by *us / or *associate:	
	a) Manufactured	Yes*/No*
	b) Supplied	Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No*
1.2.0	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set has successfully completed Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Details of Steam Generator

2.00.00 Name and Address of Steam Generator Set manufacturer

2.01.00 Steam Generator steam flow capacity at SH outlet (T/Hr.)

2.02.00 Main Steam Temperature at SH outlet (°C)

2.03.00 Main Steam Pressure at SH outlet [kg/cm²/(a)]

2.04.00 Reheat steam flow (T/Hr.)

2.05.00 a) Reheater outlet pressure [kg/cm₂ (a)]

b) Reheater outlet temperature (°C)

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.06.00	Whether balanced draft type or not	
2.7.0	Type of Steam Generator	
	i) Single pass (tower type) or two pass type (must match with offered type)	
	ii) Once through type	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*
2.08.00	Type of circulation system (Natural or Forced Circulation)	
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)	
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m ²)	
2.11.0	Type of coal used	
	i) Max. HHV (Kcal/Kg)	
	ii) Min. HHV (Kcal/Kg)	
	iii) Max. Ash content (%)	
	iv) Max. total moisture content (%)	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	v) Volatile matter content (%)	
2.11.1	Type of oil used	
	i) HHV (Kcal/Kg)	
	ii) Sulphur content (%)	
	iii) Viscosity in centistoke at 50°C (Max.°C)	
	iv) Pour point (°C)	
	v) Flash point (°C)	
2.12.0	Fuel (other than pulverised coal fired)	
2.12.1	Type of fuel used	
2.12.2	Firing rate	
2.12.3	Calorific value of fuel (Kcal/kg)	
2.13.00	Designed Boiler efficiency and corresponding GCV	
2.14.00	Tested boiler efficiency and corresponding GCV	
2.15.00	Tested boiler efficiency corrected to design conditions and corresponding GCV	
2.16.00	a) Whether used for two shifting b) If yes, number of such operations it has been designed for	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7,
	c) No. of actual two shifting cycles it has actually operated on till date	
2.17.0	Minimum start-up time achieved	
	i) Cold (after 72 hrs. of unit shut down)	
	ii) Warm (after 36 hrs. of unit shut down)	
	iii) Hot (after 8 hrs. of unit shut down)	
2.18.00	Availabilities of steam generator for last two years	
2.19.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators	
3.00.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	
#1.6.0	Undertaking w.r.t Deed(s) of Joint Undertaking (DJU) executed by us, *our Associate, *our / our Associate's Indian Subsidiary Company / JV Company (as the case may be), *our Associate's QSGM, Other Promoter having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (as the case may be), *subsidiaries of Holding Company (the Bidder/ the Associate) and *the manufacturing subsidiary Company, *Technology Owner (Licensor) of supercritical steam generator and **Indian Subsidiary Company / JV Company / Indian Manufacturing Company (as per 1.6.1 of item 4 of BDS)" as per clause 1.1.3 and/or applicable Notes for clause no. 1.0.0 of Item No. 4 of BDS is enclosed at Annexure.....to this Attachment.	
#1.7.0	Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of clause 1.6.1 and/or Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.	

Bidder to strike out whichever is not applicable.

Date	:	(Signature).....
Place	:	(Printed Name).....
		(Designation).....
		(Common seal).....

2.0.0 We, M/s....., **[Qualified Steam Turbine Generator Manufacturer (QSTGM)]**, are seeking Qualification as per clause 1.1.0 **[As Qualified Steam Turbine Generator Manufacturer as per clause 1.1.1(B)]**, Item No. 4 of BDS.

*We, M/s..... (QSGM as Bidder), are associating with M/s (Qualified Steam Turbine Generator Manufacturer / Indian Subsidiary of QSTGM / JV Company of QSTGM) and shall source the Steam Turbine Generator Set from M/s (Associate) as per clause 1.1.2(c) item no. 4 of BDS. The details are as follows:

2.1.0 We confirm that the QSTGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of (i) at least one (1) number supercritical steam turbine of tandem compound, condensing, reheat type of 500 MW or above capacity with main steam pressure of 225 Kg/cm² (gauge) or higher and main steam / reheat temperature of 565° C / 565° C or higher and (ii) at least one (1) number of generator of two pole, Thermal class 155 (F) winding insulation, hydrogen / water cooled stator and hydrogen / water cooled rotor of 500 MW or above capacity. These steam turbine and generator are in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening. The details are as follows :-

S No.	Item Description	For Steam Turbine	For Generator (if separate station)
		----- Station-1, 2, 3	----- Station-1, 2, 3

1.00.00 Name, address, e-mail, Tel. No.
and Fax No. of the QSTGM

1.1.0 Name and Designation of the
responsible person in QSTGM

1.1.1 Name of the reference station
and its location

1.1.2 Name, address, Fax No.,
e-mail and Tel. No. of
Owner of the reference station

S No.	Item Description	For Stean Turbine	For Generator (if separate station)
		----- Station-1, 2, 3	----- Station-1, 2, 3
1.1.3	Name, address, Fax No., e-mail and Tel. No. of intermediary organisation in case the award has been recieved by QSTGM from intermediary organisation		
1.2.0	Name and Designation of the responsible person in Owner's organisation		
1.2.1	Name and Designation of the responsible person in intermediary organisation.		
1.03.00	No. of Steam Turbine Generator Sets supplied by us for the station		
1.04.00	Contract No. and Date		
1.05.00	Capacity in MW of Unit		
1.06.00	Starting date of project		
1.07.00	Scheduled date of commissioning		
1.08.00	Actual date of commissioning		
1.09.00	Date of commencement of successful operation		
1.10.0	Scope of work executed by us for the aforesaid Steam Turbine Generator Set includes the following :		
	(a) Designed	*Yes/*No	*Yes/*No

S No.	Item Description	For Stean Turbine	For Generator (if separate station)
		----- Station-1, 2, 3	----- Station-1, 2, 3
(b)	Engineered	*Yes/*No	*Yes/*No
(c)	*Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No
(e)	*Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No
f)	Whether the plant is in successful operation for a period of one (1) year (minimum) prior to date of Techno-Commercial bid opening		Yes*/No*

(**In case the QSTGM has acted as advisor for erection / commissioning of reference Steam Turbine & Generator, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS)

S.No.	Item Description	Installation	Installation	Installation
		No. 1	No. 2	No. 3

2.00.00 Details of Turbine

2.01.00 Steam Turbine make

2.02.00 Tandem compound *Yes/*No *Yes/*No *Yes/*No

2.03.00 No. of Reheat

S.No.	Item Description	Installation No. 1	Installation No. 2	Installation No. 3
2.4.0	(i) No. of Cylinders:			
	(a) HP			
	(b) IP			
	(c) Combined HP-IP			
	(d) LP			
	(ii) Whether HP and IP cylinders are combined or separate			
2.5.0	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP turbine (if applicable)			
	(d) LP Turbine			
2.06.00	Main steam pressure (gauge)			
2.07.00	Main steam temperature (deg.C)			
2.08.00	Reheat Steam temperature (deg.C)			
2.09.00	Condensing type	*Yes/*No	*Yes/*No	*Yes/*No
2.10.00	Rated speed (RPM) and operating frequency range (Hz)			
2.11.00	No. of Steam Extractions			
2.12.00	Steam Turbine and Generator Directly coupled	*Yes/*No	*Yes/*No	*Yes/*No

S.No.	Item Description	Installation No. 1	Installation No. 2	Installation No. 3
2.13.00	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.00.00	Generator Details			
3.01.00	Generator make and model No.			
3.02.00	Rated MVA			
3.03.00	Rated Power Factor			
3.04.00	MW rating			
3.05.00	Rated voltage (kV)			
3.06.00	No. of phases			
3.07.00	No. of poles			
3.08.00	Mounting	*Horizontally /*Vertically	*Horizontally /*Vertically	*Horizontally /*Vertically
3.09.00	Installation	* Indoor/ *Outdoor	* Indoor/ *Outdoor	* Indoor/ *Outdoor
3.10.00	Cylindrical rotor type	* Yes/*No	*Yes/*No	*Yes/*No
3.11.00	Cooling medium			
	(a) Stator			
	(b) Rotor			
3.12.0	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			
3.13.00	Schedule date of Commissioning			
3.14.00	Actual date of commissioning			

S.No.	Item Description	Installation No. 1	Installation No. 2	Installation No. 3
3.15.00	Date of commencement of successful operation			
4.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Turbine *Generator Set (as applicable) is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial Bid Opening and caused no serious problem in past, furnished at Annexure..... to this Attachment			
4.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
4.2.0	Documentary evidence in case the award for reference work (steam turbine generator set) has been received by Bidder (QSTGM) / Associate (QSTGM / Indian Subsidiary / JV Company of QSTGM) from *Owner of plant or any *other intermediary organization			
	(i) Certificate from *Owner of the plant or *intermediary organisation to be furnished by Bidder (QSTGM) / Bidder on behalf of its Associate in support of the claim of meeting requirement at clause 1.1.0 item 4 of BDS as the case may be, enclosed at Annexure.... to this Attachment			

S.No.	Item Description	Installation No. 1	Installation No. 2	Installation No. 3

(ii)	Certificate from Owner of the plant to be furnished by Bidder (QSTGM)/Bidder on behalf of its Associate for the successful operation of the Steam Turbine *Generator Set (as applicable) as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment			

2.2.0*(a) We confirm that we / our Associate*, a QSTGM, have registered an Indian Subsidiary Company M/s..... / our Associate is an Indian Subsidiary Company of M/s(QSTGM) registered in India, as per Companies Act of India, for manufacturing **supercritical steam turbine generator sets** covering the type, size and rating specified.

Further, the Indian Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... is a subsidiary company of M/s..... (QSTGM) and shall remain a subsidiary company of the QSTGM for a minimum period of 7 years from the date of incorporation of this Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

*We confirm that the QSTGM meets the requirement of clause 1.1.1(B) of Item No. 4.0 of BDS **except for Generator** and accordingly, the Indian Subsidiary Company have associated and have a technology transfer agreement with M/s..... (**Qualified Generator Manufacturer**) who meets the requirement in respect of generator as per clause 1.1.4 of Item No. 4.0 of BDS. M/s..... (Qualified Generator Manufacturer) have minimum 10% equity participation and shall continue to maintain equity participation of minimum 10% in the said Indian Subsidiary Company for a lock in period of 7 years from the date of incorporation of this Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of Indian Subsidiary Company
1.01.00	Equity participation of Qualified Steam Turbine Generator* manufacturer in the subsidiary company (In percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish letter of undertaking as per format enclosed at Attachment-3A11 for QSTGM's equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM)
2.00.00	*Equity participation of other Promoter having Equity more than 25% in Indian Subsidiary Company
2.01.00	*Lock in period for above equity participation from the date of incorporation.
3.00.00	*Equity participation of Qualified Generator manufacturer, in the Indian Subsidiary company.

S.No.	Item Description
3.01.00	*Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian subsidiary company or upto the end of defect liability period of the contract whichever is later? (Qualified Generator manufacturer to furnish letter of undertaking as per format enclosed at Attachment -3A-11 for their equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.4 of Item No. 4.0 of BDS supported by Board Resolution of the Qualified Generator manufacturer)
4.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
4.01.00	Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure_____ of this Attachment

2.2.0*(b) We confirm that *we / *our Associate, a QSTGM, have registered a Joint Venture (JV) Company M/s..... / our Associate is a Joint Venture Company of QSTGM registered in India, as per Companies Act of India, for manufacturing **supercritical steam turbine generator set** covering the type, size and rating specified. The Joint Venture (JV) Company is promoted by (i) M/s....., an Indian Company registered in India under the Companies Act of India and (ii) M/s, a **QSTGM**, who meets the requirement as per the details furnished in clause 2.1.0 above.

The JV Company have obtained certificate for commencement of Business in India as on the date of Techno-Commercial bid opening, (Applicable in case, the JV Company is incorporated as a public limited Company).

We further confirm that the QSTGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the JV Company for a lock-in

period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

Further M/s....., one of the promoters is a majority stakeholder who have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

*We further confirm that the QSTGM meets the requirement of clause 1.1.1(B) of Item No. 4.0 of BDS **except for Generator** and accordingly, the JV Company have associated and have a technology transfer agreement with M/s.....(**Qualified Generator Manufacturer**) who meets the the requirement in respect of generator as per clause 1.1.4 of Item No. 4.0 of BDS. M/s..... (Qualified Generator Manufacturer) have minimum 10% equity participation and shall continue to maintain equity participation of minimum 10% in the JV Company for a lock in period of 7 years from the date of incorporation of this JV Company or up to the end of the defect liability period of the contract whichever is later.

The details of the Joint Venture (JV) company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of JV Company
1.01.00	Equity participation of Qualified Steam Turbine Generator* manufacturer in the JV company (In percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation
	(Bidder to furnish letter of undertaking as per format enclosed at Attachment 3A-11 for QSTGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM)

S.No.	Item Description	
2.00.00	Equity participation of the Majority Stake Holder having Equity more than 51% in JV Company	
2.01.00	Lock in period for above equity participation from the date of incorporation (Majority Stake Holder to furnish letter of undertaking as per format enclosed at Attachment 3A-11 for their equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the Majority Stake Holder)	
3.00.00	*Equity participation of Qualified Generator manufacturer in the JV Company	
3.01.00	*Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian JV company or upto the end of defect liability period of the contract whichever is later? (Qualified Generator Manufacturer to furnish letter of undertaking as per format enclosed at Attachment 3A-11 for their equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.4 of Item No. 4.0 of BDS supported by Board Resolution of the Qualified Generator Manufacturer)	*Yes/*No

S.No.	Item Description
4.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
4.01.00	Copy of Certificate of Incorporation and Memorandum of Association of JV company is enclosed at Annexure_____ of this Attachment

2.2.0**(b)(i) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate) is an entity other than the QSTGM and is an Indian Company and has executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening. The details are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No. Tel. No. and e-mail			
1.2	Name of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			

*Bidder to furnish 2.2.0**(b)(i) only when his Associate is a JV Company of QSTGM as per clause no. 1.4.1(a) of Item no. 4 of BDS.*

S.No.	Item Description	Project#1	Project#2	Project#3
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.05	Starting date of Project			
1.06	Scheduled date of Commissioning			
1.07	Actual date of Commissioning			
1.08	Date of Commencement of successful Operation			
1.09	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence is support of above are attached at Annexure..... of this Attachment			

2.2.0**(b)(ii) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate), an entity other than the QSTGM, are an Indian Company. Our Associate's Parent Company M/s have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4,000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening.

We, on behalf of our Associate, confirm that our Associate is a wholly owned subsidiary of their Parent Company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the Associate (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

The qualification details of the Parent Company are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No. Tel. No. and e-mail			
1.2	Name of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			

*2.2.0***(b)(ii) is to be filled in only in pursuance of Note 6 for clause no. 1.0.0 of Item no. 4 of BDS.

S.No.	Item Description	Project#1	Project#2	Project#3
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			
1.13	Date of Incorporation of JV Company			
1.14	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			
1.15	Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later?	*Yes/*No	*Yes/*No	*Yes/*No

S.No.	Item Description	Project#1	Project#2	Project#3
	(Bidder to furnish Letter of Undertaking as per format enclosed at Attachment 3A-11 for equity participation of parent company in the wholly owned subsidiary company along with lock in period of such equity in compliance to note 6 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)			

2.2.0*(c) We confirm that M/s our / our Associate's *Indian subsidiary Company / our Associate (an Indian *Subsidiary / *JV Company), whose details are indicated at *2.2.0(a) / *2.2.0(b) above, have registered **another Indian manufacturing Subsidiary Company** M/s....., as per Companies Act of India for manufacturing **supercritical steam turbine generator sets** in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial Bid Opening(Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... the manufacturing subsidiary company shall remain a subsidiary of the Indian Subsidiary/ JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian manufacturing Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of Indian Manufacturing Subsidiary Company

2.2.0*(c) is to be filled in only in pursuance of Note 8 for clause. no. 1.0.0 of Item no. 4 of BDS.

S.No.	Item Description	
1.01.00	Equity participation of the *Indian Subsidiary / *JV company in the Indian Manufacturing Subsidiary Company (in percentage of the total equity)	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian manufacturing subsidiary company or upto the end of defect liability period of the contract whichever is later ? (Bidder to furnish Letter of Undertaking as per Attachment-3A11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to note 8 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of *Indian subsidiary / *JV company)	*Yes/*No
2.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure _____ of this Attachment	
2.01.00	Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of Indian manufacturing subsidiary company is enclosed at Annexure _____ of this Attachment	

2.3.0** We confirm that M/s....., **a super critical steam turbine manufacturer** meets the requirements of clause 1.1.1(B) **except for generator**. Hence, as per clause 1.1.4 of item no. 4.0 of BDS, the Subsidiary Company / JV Company (as the case may be) have associated with and have a Technology Transfer agreement with M/s....., (Qualified Generator Manufacturer) meeting the requirements of clause 1.1.4 of item no. 4.0 of BDS fully in respect of generator. The details are as follows :-

The Qualified Generator Manufacturer have minimum 10% equity participation and shall continue to maintain a minimum equity participation of 10% in the Indian Subsidiary / JV Company (as the case may be), for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary / JV Company (as the case may be) or up to the end of defect liability period of the contract whichever is later.

S.No.	Item Description	Installation No. 1	Installation No. 2	Installation No. 3
1.00.00	Name of the reference station and its location			
1.1.0	Name, address, email, Fax No. and Tel. No. of Owner of Plant			
1.1.1	Name, address, e-mail, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by Qualified Generator Manufacturer from intermediary organisation			
1.2.0	Name and Designation of the responsible person in Owner's organisation			
1.2.1	Name and Designation of the responsible person in intermediary organisation.			
1.03.00	No. of Generator Sets supplied			
1.04.00	Contract No. and Date			
1.05.00	Capacity in MW of Unit			

S.No.	Item Description	Installation No. 1	Installation No. 2	Installation No. 3
1.06.00	Starting date of project			
1.07.00	Scheduled date of commissioning			
1.08.00	Actual date of commissioning			
1.09.00	Date of commencement of successful operation			
1.10.00	Scope of work for the aforesaid Generator Set includes the following:			
(a)	Designed	*Yes/*No	*Yes/*No	*Yes/*No
(b)	Engineered	*Yes/*No	*Yes/*No	*Yes/*No
(c)	*Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No	*Yes/*No
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No	*Yes/*No
(e)	*Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No	*Yes/*No

** Necessary Documents / Certificate from the client, in support of Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS are Attached at Annexure..... of this Attachment.

1.2.0 Details of Generator

1.2.1 Generator make and
model No.

1.2.2 Rated MVA

1.2.3 Rated Power Factor

1.2.4 MW rating

S.No.	Item Description	Installation No. 1	Installation No. 2	Installation No. 3
1.2.5	Rated voltage (kV)			
1.2.6	No. of phases			
1.2.7	No. of poles			
1.2.8	Mounting	*Horizontally /*Vertical	*Horizontally /*Vertical	*Horizontally /*Vertical
1.02.09	Installation	* Indoor/ *Outdoor	* Indoor/ *Outdoor	* Indoor/ *Outdoor
1.02.10	Cylindrical rotor Type	* Yes/*No	* Yes/*No	* Yes/*No
1.02.11	Cooling medium			
	(a) Stator			
	(b) Rotor			
1.2.12	Thermal class of Insulation			
	(a) Stator			
	(b) Rotor			
1.2.13	Date of Commissioning			
1.2.14	Date of Commencement of successful operation			
2.00.00	Certificate(s) from the Owner that the aforesaid Generator Set is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial Bid Opening is furnished at Annexure..... to this Attachment			
3.00.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			

2.4.0 *We confirm that M/s....., (Bidder / Associate, a QSTGM) is seeking qualification as holding company (singularly or collectively) with their subsidiaries (held directly or indirectly) as per Note No. 4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

S.No.	Item Description	Installation No. 1	Installation No. 2	Installation No. 3
2.4.1	Bidder / Associate and their Subsidiary's(ies)' (To be filled at page to of Experience details in respect of meeting requirement for QSTGM (as per clause 1.1.1(B)) , item 4 of BDS			
2.4.2	Details of Subsidiary Company / Joint Venture Company registered by the Bidder / Associate in India meeting requirement of Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS	(To be filled at page to of this Attachment)		
2.4.3	a) *Name, Address, email, Fax, Tel. No. of the Subsidiary(ies) meeting the QR for supercritical Steam Turbine Manufacturer as per clause 1.1.0 of BDS			
	b) *Name, Address, email, Fax, Tel. No. of the Subsidiary(ies) meeting the QR for Generator Manufacturer as per clause 1.1.0 of BDS			
2.4.4	a) *Name, address & Telephone No., Fax and e-mail of subsidiary company owning the technology for supercritical steam turbine			
	b) *Name, address & Telephone No., Fax and e-mail of subsidiary company owning the technology for generator			

*We have submitted the experience details in support of Qualifying Requirement at 2.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between us / our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 2.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (**Qualified Steam Turbine Generator Manufacturer**) and above subsidiaries.

2.5.0* We confirm that our Associate i.e. M/s have manufactured / supplied in India Eight (8) Nos. supercritical Steam Turbine Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Turbine Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Turbine Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 (a) of Item no. 4 of BDS. Further, we confirm that we shall offer only the type of steam Turbine generator for which our associate is qualified.

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

1.00.00 Name and location of the reference
Station in which the unit is located

1.1.0 Name, address, email, Tel. no.
and Fax of owner of the station

1.1.1 Name and Designation of the
responsible person in owner's
organisation

1.1.2 Capacity of Steam Turbine
Generator Unit in MW

1.1.3 Contract No. & Date

1.1.4 Starting date of project

1.1.5	Scheduled date of Commissioning	
1.1.6	Actual date of Commissioning	
1.1.7	Date of commencement of successful operation	
1.1.8	Date of commencement of Commercial operation (COD)	
1.1.9	Whether the Steam Turbine Generator is supercritical	Yes*/No*
1.1.10	Scope of work executed by *us / or *associate:	
	a) Manufactured	Yes*/No*
	b) Supplied	Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No*
1.2.0	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set has successfully completed Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.3	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	
2.00.00 Details of Turbine		
2.01.00	Steam Turbine make	
2.02.00	Tandem compound	Yes*/No*
2.03.00	No. of Reheat	
2.4.0	(i) No. of Cylinders:	
	(a) HP	
	(b) IP	
	(c) Combined HP-IP	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	(d) LP	
	(ii) Whether HP and IP cylinders are combined or separate	
2.5.0	Module Number	
	(a) HP Turbine	
	(b) IP Turbine	
	(c) Combined HP-IP turbine (if applicable)	
	(d) LP Turbine	
2.06.00	Main steam pressure (gauge)	
2.07.00	Main steam temperature (deg.C)	
2.08.00	Reheat Steam temperature (deg.C)	
2.09.00	Condensing type	Yes*/No*
2.10.00	Rated speed (RPM) and operating frequency range (Hz)	
2.11.00	No. of Steam Extractions	
2.12.00	Steam Turbine and Generator Directly coupled	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.13.00	Steam Turbine Generator Set Installation (Indoor / Outdoor)	
3.00.00	Generator Details	
3.01.00	Generator make and model No.	
3.02.00	Rated MVA	
3.03.00	Rated Power Factor	
3.04.00	MW rating	
3.05.00	Rated voltage (kV)	
3.06.00	No. of phases	
3.07.00	No. of poles	
3.08.00	Mounting (Horizontal / Vertical)	
3.09.00	Installation (Indoor / Outdoor)	
3.10.00	Cylindrical rotor type	Yes*/No*
3.11.0	Cooling medium	
	(a) Stator	
	(b) Rotor	
3.12.0	Thermal Class of insulation	
	(a) Stator	
	(b) Rotor	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

3.13.00 Schedule date of Commissioning

3.14.00 Actual date of commissioning

3.15.00 Date of commencement
of successful operation

4.00.00 Documentary evidence in support
of QR data is enclosed at
Annexure..... to this Attachment

#2.6.0 Undertaking w.r.t Deed(s) of Joint Undertaking (DJU) executed by us, our Associate, our / our Associate's Indian Subsidiary / JV Company (as the case may be), our Associate's QSTGM, Other Promoter having 25% or higher Equity Participation in the Associate's Subsidiary Company/JV Company (as the case may be), *Qualified Generator Manufacturer, *subsidiaries of Holding Company and *the Indian Manufacturing Subsidiary Company and *"Indian Subsidiary Company / JV Company/ Indian Manufacturing Company (as per 1.6.1 of item 4 of BDS)" , as per clause 1.1.3 and/or 1.1.4 and/or applicable Notes for clause no. 1.0.0 of Item No. 4 of BDS, is enclosed at Annexure.....to this Attachment.

#2.7.0 Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of clause 1.6.1 and/or Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.

Bidder to strike out whichever is not applicable.

*Bidder to strike out whichever is not applicable

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common seal).....

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

**(Experience details for Indian Steam Generator and Steam Turbine Generator Manufacturer as
per Clause 1.2.0, Item No. 4.0 of BDS)**

NOT USED

Note: For the purpose of these Qualifying Requirements, Route 1.2.0 is not used. Wherever Clause 1.2.0, 1.2.1, 1.2.2 & 1.2.3 (as per item 4 of BDS) have been referred to either directly or indirectly in the other qualification Routes/ Financial criteria, the same should be deemed to have been omitted.”

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(Experience details for an Indian Subsidiary Company of a Qualified Steam Generator Manufacturer (QSGM) and/or a Qualified Steam Turbine Generator Manufacturer (QSTGM) as Bidder, as per Clause 1.3.0, Item No. 4.0 of BDS)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

1.0.0 *We, M/s....., an Indian Subsidiary Company of a Qualified Steam Generator Manufacturer (QSGM), are seeking Qualification as per clause 1.3.0, Item No. 4 of BDS.

*We, M/s..... (an Indian Subsidiary Company of a QSTGM, as Bidder), are associating with M/s (*Qualified Steam Generator Manufacturer / *Indian Subsidiary of a Qualified Steam Generator Manufacturer / *Indian JV Company of a Qualified Steam Generator Manufacturer) and shall source the Steam Generator Set from M/s (Associate) as per clause 1.3.1(b) item no. 4 of BDS. The details are as follows :

1.1.0 *(a) We confirm that *we / *our Associate *are / *is an Indian Subsidiary Company of M/s..... (QSGM) registered in India / *our Associate (QSGM) have registered an Indian Subsidiary Company in India, as per Companies Act of India, for manufacturing **supercritical Steam Generator sets** covering the type, size and rating specified.

Further, the Indian Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... is a subsidiary company of M/s..... (QSGM) and shall remain a subsidiary company of the QSGM for a minimum period of 7 years from the date of incorporation of the Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of Indian Subsidiary Company
1.01.00	Equity participation of QSGM in the Indian subsidiary company (In percentage of the total equity)
1.02.00	Lock in period for above subsidiary status from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 from the promotor regarding maintaining the subsidiary status as declared along with lock in period in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSGM) (Alternatively, in case the Indian Subsidiary Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, the bidder has the option of submitting a "Letter of Undertaking" for support from the QSGM as per format enclosed at Attachment 3A11.a instead of Attachment 3A11, in line with Note 9 to clause 1.0.0 of item 4 of BDS)
2.00.00	*Equity participation of other Promoter having Equity equal to or more than 25% in the Indian Subsidiary Company
2.01.00	*Lock in period for above equity participation from the date of incorporation.
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure_____of this Attachment

1.1.0 *(b) We confirm that *our Associate is a Joint Venture Company registered in India / *our Associate (QSGM) have registered an Indian JV Company in India, as per Companies Act of India, for manufacturing supercritical steam generator sets covering the type, size and rating specified.

The Joint Venture (JV) Company is promoted by (i) M/s....., an Indian Company registered in India under the Companies Act of India and (ii) M/s....., a QSGM, who meets the requirement of clause 1.1.0 (A) of Item 4 of BDS and where details are furnished in clause 1.2.0 below.

The JV Company have obtained certificate for commencement of Business in India as on the date of Techno-Commercial bid opening, (Applicable in case, the JV Company is incorporated as a public limited Company).

We confirm that the QSGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the Indian JV Company for a lock-in period of 7 years from the date of incorporation of Indian JV Company or up to the end of the defect liability period of the contract whichever is later.

Further, M/s....., one of the promoters is a majority stakeholder who have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The details of the Joint Venture (JV) company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of JV Company
1.01.00	Equity participation of QSGM in the JV company (In percentage of the total equity)

S.No.	Item Description
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish letter of undertaking as per format enclosed at Attachment 3A-11 as per Note 9 of Clause 1.0.0 of Item 4 of BDS for QSGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the QSGM) (Alternatively, in case the Indian JV Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, Bidder has the option of submitting a "Letter of Undertaking" for support from the QSGM as per format enclosed at Attachment 3A11.a instead of Attachment 3A11, in line with Note 9 to clause 1.0.0 of item 4 of BDS)
2.00.00	Equity participation of the Majority Stake Holder having Equity more than 51% in JV Company
2.01.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish letter of undertaking as per format enclosed at Attachment 3A-11 as per Note 9 of Clause 1.0.0 of Item 4 of BDS for Majority Stake Holder's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the Majority Stake Holder)
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure _____ of this Attachment
3.01.00	Copy of Certificate of Incorporation

and Memorandum of Association of
JV company is enclosed at Annexure
_____ of this Attachment

1.1.0**(b)(i) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company, is an entity other than the QSGM, and is an Indian Company and has executed, in the last 10 years, large industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening. The details are as follows :

S. No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			

*Bidder to furnish 1.1.0**(b)(i) & (ii) only when his Associate is a JV Company of QSGM, as per clause no. 1.4.1(a), Item no. 4 of BDS.*

S.No.	Item Description	Project#1	Project#2	Project#3
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to the date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			

1.1.0**(b)(ii) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company, an entity other than the QSGM, are an Indian Company. The said Indian JV Company's Parent Company M/s have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4,000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening.

We, on behalf of our Associate, confirm that the Indian JV Company is a wholly owned subsidiary of their parent company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the said Indian JV Company (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

*1.1.0**(b)(ii) is to be filled in only in pursuance of Note 6 for clause no. 1.0.0 of Item no. 4 of BDS.*

The qualification details of Parent Company of Indian JV Company are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.00	Name of the reference station & its Location			
1.01	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.02	Name and designation of the responsible person in Owner's organisation			
1.03	Contract No. & date			
1.04	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.05	Starting date of Project			
1.06	Scheduled date of Commissioning			
1.07	Actual date of Commissioning			
1.08	Date of Commencement of successful Operation			
1.09	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No

S.No.	Item Description	Project#1	Project#2	Project#3
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			
1.13	Date of Incorporation of JV Company			
1.14	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			
1.15	Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later? (Bidder to furnish letter of undertaking as per format enclosed at Attachment 3A-11 for equity participation of parent company in the wholly owned subsidiary company along with lock in period of such equity in compliance to note 6 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)	*Yes/ *No	*Yes/ *No	*Yes/ *No

- 1.2.0** We confirm that the QSGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of at least one (1) number of pulverised coal fired supercritical Steam Generator having rated capacity of 1500 tonnes of steam per hour or above. Further, such Steam generator is of the type specified, i.e. single pass (tower type) or two pass type using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing, and is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

* Further, we confirm that reference Steam Generator is provided with evaporator suitable for variable pressure operation (sub-critical and super-critical pressure ranges). Also, we confirm that offered steam generator is of the same type, having same type of water wall tubing for which reference of Steam Generator has been furnished below The details are as follows :-

S.No.	Item Description	Station#1	Station#2	Station#3
1.00.00	Name, address, e-mail, Tel. No. and Fax No. of the QSGM			
1.1.0	Name and Designation of the responsible person in QSGM			
1.1.1	Name of the reference station and its location			
1.1.2	Name, address, e-mail, Fax No. and Tel. No. of Owner of station			
1.1.3	Name and Designation of the responsible person in Owner's organisation			
1.2.0	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by QSGM from intermediary organisation			
1.2.1	Name and Designation of the responsible person in intermediary organisation			

S.No.	Item Description	Station#1	Station#2	Station#3
1.03.00	No. of units & capacity of each unit in MW			
1.04.00	No. of steam generator sets supplied by QSGM for the reference station			
1.05.00	Contract No. & Date			
1.06.00	Starting date of Project			
1.07.00	Scheduled date of Commissioning			
1.08.00	Actual date of Commissioning			
1.09.00	Date of commencement of successful operation			
1.10.00	Whether the Plant is pulverised coal fired	Yes*/No*	Yes*/No*	Yes*/No*
1.11.00	Scope of work executed by QSGM for the aforesaid Steam Generator includes the following :			
	a) Designed	Yes*/No*	Yes*/No*	Yes*/No*
	b) Engineered	Yes*/No*	Yes*/No*	Yes*/No*
	c) *Manufactured/*Got manufactured	Yes*/No*	Yes*/No*	Yes*/No*
	d) *Erection/*Supervised erection/**Acted as Advisor for erection	Yes*/No*	Yes*/No*	Yes*/No*
	e) *Commissioned/*Supervised commissioning/**Acted as advisor for commissioning	Yes*/No*	Yes*/No*	Yes*/No*

S.No.	Item Description	Station#1	Station#2	Station#3
	f) Whether the plant is in successful operation for a period of one (1) year (minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*
	(**In case the QSGM has acted as advisor for erection / commissioning of reference Steam Generator & auxiliaries, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to note no. 2 for clause no. 1.0.0, Item no. 4 of BDS)			
2.00.00	Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)			
2.01.00	Main Steam Temperature at SH outlet (°C)			
2.02.00	Main Steam Pressure at SH outlet [kg/cm ² (a)]			
2.03.00	Reheat steam flow (T/Hr.)			
2.04.00	a) Reheater outlet pressure [kg/cm ² (a)]			
	b) Reheater outlet temperature (°C)			
2.05.00	Whether balanced draft type or not	Yes*/No*	Yes*/No*	Yes*/No*
2.6.0	Type of Steam Generator			
	i) Single pass (tower type) or two pass type (must match with offered type)			
	ii) Once through type	Yes*/No*	Yes*/No*	Yes*/No*

S.No.	Item Description	Station#1	Station#2	Station#3
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range) (In case the answer to above clause (iii) is "No", in such a case, the Bidder on behalf of the QSGM shall furnish additional data in support of requirements indicated at Note (5) to clause 1.0.0, Item 4 of BDS and detailed in clause 1.5.0 to this Attachment)	Yes*/No*	Yes*/No*	Yes*/No*
2.07.00	Type of circulation system (Natural or Forced/Assisted)			
2.08.00	Type of Water wall tubes [spiral wound (inclined) or vertical plain or vertical rifled] [must match with offered type]			
2.09.00	Minimum mass flow through the water wall tubes Kg/sec./m ²			
2.10.0	Type of coal used			
	i) Max. HHV (Kcal/Kg)			
	ii) Min. HHV (Kcal/Kg)			
	iii) Max. Ash content (%)			
	iv) Max. total moisture content (%)			
	v) Volatile matter content (%)			
2.10.1	Type of oil used			
	i) HHV (Kcal/Kg)			
	ii) Sulphur content (%)			
	iii) Viscosity in centistoke at 50°C (Max.°C)			

S.No.	Item Description	Station#1	Station#2	Station#3
	iv) Pour point (°C)			
	v) Flash point (°C)			
2.11.0	Fuel (other than pulverised coal fired)			
2.11.1	Type of fuel used			
2.11.2	Firing rate			
2.11.3	Calorific value of fuel (Kcal/kg)			
2.12.00	Designed Boiler efficiency and corresponding GCV			
2.13.00	Tested boiler efficiency and corresponding GCV			
2.14.00	Tested boiler efficiency corrected to design conditions and corresponding GCV			
2.15.00	a) Whether used for two shifting			
	b) If yes, number of such operations it has been designed for			
	c) No. of actual two shifting cycles it has actually operated on till date			
2.16.0	Minimum start-up time achieved			
	i) Cold (after 72 hrs. of unit shut down)			
	ii) Warm (after 36 hrs. of unit shut down)			

S.No.	Item Description	Station#1	Station#2	Station#3
	iii) Hot (after 8 hrs. of unit shut down)			
2.17.00	Availabilities of steam generator for last two years			
2.18.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators			
3.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
3.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
3.2.0	Documentary evidence in case the award for reference work (steam generator set) has been received by Bidder (*Indian Subsidiary Company of QSGM) / *Associate (*QSGM / Indian *Subsidiary / *JV Company of QSGM) from Owner of plant or any other intermediary organization			
	(i) Certificate from *Owner of the plant or *intermediary organisation to be furnished by *Bidder / *Bidder on behalf of its Associate in support of the claim of meeting requirement of Note 3 of clause 1.1.0, item 4 of BDS as the case may be, enclosed at Annexure..... to this Attachment			

S.No.	Item Description	Station#1	Station#2	Station#3
	(ii) Certificate from Owner of the plant to be furnished by *Bidder / *Bidder on behalf of its Associate for the successful operation of the Steam Generator Set as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment			

Notes :

1. Wherever the term 'coal fired' is appearing above, "coal" shall be deemed to also include bituminous Coal/Sub Bituminous Coal/Brown Coal/Lignite.

1.3.0 We confirm that we (an Indian Subsidiary Company of a QSGM) / our Associate (Indian *Subsidiary / *JV Company of a QSGM) / our Associate's (QSGM's) *Indian subsidiary / *JV Company, whose details are indicated at *1.1.0(a) / *1.1.0(b) above have registered another **Indian manufacturing Subsidiary Company** M/s....., as per Companies Act of India for manufacturing **supercritical steam generator sets** in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India (Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that the manufacturing company shall remain a subsidiary of the Indian Subsidiary / JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

1.3.0 is to be filled in only in pursuance of Note 8 for clause no. 1.0.0 of Item 4 of BDS.

The details of Indian manufacturing Subsidiary Company are as follows :

S.No.	Item Description	
1.00.00	Date of Incorporation of Indian manufacturing Subsidiary Company	
1.01.00	Equity participation of the *Indian subsidiary / *JV company in the Indian manufacturing subsidiary company (in percentage of the total equity)	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian manufacturing subsidiary company or upto the end of defect liability period of the contract whichever is later ?	*Yes/*No
	(Bidder to furnish letter of undertaking as per format enclosed at Attachment 3A-11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to note 8 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Indian *Subsidiary / *JV Company)	
2.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment	
2.01.00	Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of Indian manufacturing subsidiary company is enclosed at Annexure_____ of this Attachment	

1.4.0 *We confirm that our Associate (QSGM) is seeking qualification as holding company (singularly or collectively) with its subsidiaries (held directly or indirectly) as per Note No.4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

1.4.1 Associate (QSGM) and their subsidiary's(ies') Experience Details in respect of meeting requirement for QSGM (as per clause 1.1.1(A)), item 4 of BDS	(To be filled at page to of this Attachment)
1.4.2 Details of *Subsidiary Company/ *Joint Venture Company registered by the Associate (QSGM) in India meeting requirement of Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS	(To be filled at page to of this Attachment)
1.4.3 *Name, Address, email, Fax, Tel. No. of the Subsidiary meeting the QR for QSGM as per clause 1.1.0 of BDS	
1.4.4 *Name, address, Telephone No., Fax and e-mail of subsidiary company owning the technology for supercritical steam generators	

*We have submitted the experience details in support of Qualifying Requirement at 1.2.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 1.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (Qualified Steam Generator Manufacturer) and above subsidiaries.

TO BE FILLED IN BY THE BIDDER WHO / WHOSE ASSOCIATE IS SEEKING QUALIFICATION AS PER CLAUSE 1.1.1(A), ITEM 4 OF BDS READ IN CONJUNCTION WITH NOTE 5 TO CLAUSE 1.0.0, ITEM 4 OF BDS (i.e. IF THE ANSWER TO SUB-CLAUSE 2.06.00(iii) TO CLAUSE 1.2.0 ABOVE IS "NO")

1.5.0 We confirm that M/s _____(supercritical Steam Generator Manufacturer) meets all the requirement as per 1.1.1(A), Item 4 of BDS **except that the evaporator** indicated in the reference steam generator is not designed for variable pressure operation and is designed for constant pressure (Universal Pressure) operation only, and is seeking qualification along with the original technology owner (Licensor) with whom he has an ongoing license agreement (which covers technology transfer), as on the date of Techno-Commercial bid opening, for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges).

Further, we confirm that original technology owner (Licensor) has experience of providing variable pressure design steam generator technology for at least one (1) no. of pulverised coal fired supercritical steam generator for a 1500 T/hr or higher capacity using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing with the evaporator suitable for variable pressure operation in sub-critical and super-critical pressure ranges and which is/are in successful operation for a period of not less than one (1) year prior to the date of **Techno-Commercial** bid opening. We further confirm that the offered type of waterwall tabing (either spiral wound (inclined) or vertical plain or vertical rifled type) is of the type for which our licencer is qualified The details of Licensor and his experience details are as follows:-

I. Details of Technology Owner (Licensor)

1.01.00	Name of the original technology owner (Licensor)
1.02.00	Address, Email ID & Tel No. & Fax
1.03.00	Name and Designation of the Responsible person in the Organization
1.04.00	Licensing agreement for max. Capacity rating of Steam Generator (in MW)

- 1.05.00 Date of Start of Licensing agreement
- 1.06.00 Date of End of Licensing agreement
- 1.07.00 Whether Scope of licensing agreement covers for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges). *Yes/*No
- 1.08.00 Copy of relevant portion of Licensing agreement attached at Annexure.....

II. Details of experience of Technology Owner (Licensor)

S.No.	Item Description	Station#1	Station#2	Station#3
1.01.00	Name of the reference station and its location			
1.02.00	Client name and its address, Fax No. & Tel. No., email ID			
1.03.00	Actual date of completion/ date of commencement of Successful operation			
1.04.00	Whether the Plant is in Successful operation	Yes*/No*		

S.No.	Item Description	Station#1	Station#2	Station#3
1.5.0	Scope of work executed for the aforesaid Steam Generator includes the following:			
	i) Designed	Yes*/No	*Yes*/No*	Yes*/No*
	ii) Engineered	Yes*/No	*Yes*/No*	Yes*/No*
	iii) Whether the plant is in successful operation for a period of one (1) year (Minimum) as on date of Techno-Commerical bid opening	Yes*/No	*Yes*/No*	Yes*/No*
1.06.00	i) Supercritical Steam Generator	Yes*/No	*Yes*/No*	Yes*/No*
	ii) Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)			
1.7.0	Type of Steam Generator			
	i) Single pass (tower type) or two pass type (must match with offered type)			
	i) Once through type	Yes*/No	*Yes*/No*	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No	*Yes*/No*	Yes*/No*
1.08.00	Type of Water wall tubes (Spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)			
1.09.00	Type of firing (Pulverised Coal)	Yes*/No	*Yes*/No*	Yes*/No*

S.No.	Item Description	Station#1	Station#2	Station#3
1.10.0	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
1.11.00	Undertaking w.r.t Deed of Joint Undertaking (DJU) as per performa enclosed at attachment-3I of Book 1 of 3, Sec-VII (Forms & procedures) is furnished alongwith the bid at Annexure			

1.6.0* We confirm that our Associate i.e. M/s have manufactured / supplied in India Eight (8) Nos. supercritical Steam Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 of Item no. 4 of BDS. Further, we confirm that we shall offer only the type of steam generator for which our associate is qualified.

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

1.00.00 Name and location of the reference
Station in which the unit is located

1.1.0 Name, address, email, Tel. no.
and Fax of owner of the station

1.1.1 Name and Designation of the
responsible person in owner's
organisation

1.1.2 Capacity of Steam Generator
Unit in MW

1.1.3 Contract No. & Date

1.1.4 Starting date of project

1.1.5 Scheduled date of Commissioning

1.1.6 Actual date of Commissioning

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.1.7	Date of commencement of successful operation	
1.1.8	Date of commencement of Commercial operation (COD)	
1.1.9	Whether the Steam Generator is supercritical	Yes*/No*
1.1.10	Scope of work executed by *us / or *associate:	
	a) Manufactured	Yes*/No*
	b) Supplied	Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No*
1.2.0	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set has successfully completed Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Details of Steam Generator

2.00.00 Name and Address of Steam Generator Set manufacturer

2.01.00 Steam Generator steam flow capacity at SH outlet (T/Hr.)

2.02.00 Main Steam Temperature at SH outlet (°C)

2.03.00 Main Steam Pressure at SH outlet [kg/cm²/(a)]

2.04.00 Reheat steam flow (T/Hr.)

2.05.00 a) Reheater outlet pressure [kg/cm² (a)]

b) Reheater outlet temperature (°C)

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.06.00	Whether balanced draft type or not	
2.7.0	Type of Steam Generator	
	i) Single pass (tower type) or two pass type (must match with offered type)	
	ii) Once through type	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*
2.08.00	Type of circulation system (Natural or Forced Circulation)	
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)	
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m ²)	
2.11.0	Type of coal used	
	i) Max. HHV (Kcal/Kg)	
	ii) Min. HHV (Kcal/Kg)	
	iii) Max. Ash content (%)	
	iv) Max. total moisture content (%)	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	v) Volatile matter content (%)	
2.11.1	Type of oil used	
	i) HHV (Kcal/Kg)	
	ii) Sulphur content (%)	
	iii) Viscosity in centistoke at 50°C (Max.°C)	
	iv) Pour point (°C)	
	v) Flash point (°C)	
2.12.0	Fuel (other than pulverised coal fired)	
2.12.1	Type of fuel used	
2.12.2	Firing rate	
2.12.3	Calorific value of fuel (Kcal/kg)	
2.13.00	Designed Boiler efficiency and corresponding GCV	
2.14.00	Tested boiler efficiency and corresponding GCV	
2.15.00	Tested boiler efficiency corrected to design conditions and corresponding GCV	
2.16.00	a) Whether used for two shifting	
	b) If yes, number of such operations it has been designed for	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	c) No. of actual two shifting cycles it has actually operated on till date	
2.17.0	Minimum start-up time achieved	
	i) Cold (after 72 hrs. of unit shut down)	
	ii) Warm (after 36 hrs. of unit shut down)	
	iii) Hot (after 8 hrs. of unit shut down)	
2.18.00	Availabilities of steam generator for last two years	
2.19.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators	
3.00.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	

#1.7.0 Undertaking w.r.t Deed(s) of Joint Undertaking (DJU) executed by us, our QSGM, our Associate / our Associate's QSGM / Indian *Subsidiary Company / *JV Company (as the case may be), Other Promoter having 25% or higher equity participation in the Indian Subsidiary / JV Company (as the case may be), *subsidiaries of Holding Company and *the Indian manufacturing subsidiary Company, *Technology Owner (Licensor) of supercritical steam generator and *"Indian Subsidiary Company / JV Company / Indian Manufacturing Company (as per 1.6.1 of item 4 of BDS)" as per clause 1.3.2 and/or applicable notes for clause no. 1.0.0 of Item No. 4 of BDS is enclosed at Annexure_____to this Attachment.

#1.8.0 Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of clause 1.6.1 and/or Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.

Bidder to strike out whichever is not applicable.

Date	:	(Signature).....
Place	:	(Printed Name).....
		(Designation).....
		(Common seal).....

2.0.0 *We, M/s....., an Indian Subsidiary Company of a Qualified Steam Turbine Generator Manufacturer (QSTGM), are seeking Qualification as per clause 1.3.0, Item No. 4 of BDS.

*We, M/s..... (an Indian Subsidiary Company of QSGM, as Bidder), are associating with M/s (*Qualified Steam Turbine Generator Manufacturer / *Indian Subsidiary of a Qualified Steam Turbine Generator Manufacturer / *Indian JV Company of a Qualified Steam Turbine Generator Manufacturer) and shall source the Steam Turbine Generator Set from M/s(Associate) as per clause 1.3.1(b) item no. 4 of BDS. The details are as follows:

2.1.0 *(a) We confirm that *we / *our Associate *are / *is an Indian Subsidiary Company of M/s..... (QSTGM) registered in India / *our Associate (QSTGM) have registered an Indian Subsidiary Company in India, as per Companies Act of India, for manufacturing **supercritical Steam Turbine Generator sets** covering the type, size and rating specified. Further, the Indian Subsidiary Company have obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... is a subsidiary company of M/s..... (QSTGM) and shall remain a subsidiary company of the QSTGM for a minimum period of 7 years from the date of incorporation of the Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of Indian Subsidiary Company
1.01.00	Equity participation of QSTGM in the Indian subsidiary company (In percentage of the total equity)

S.No.	Item Description
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment-3A11 from the promotor regarding maintaining the subsidiary status as declared above for QSTGM's equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM) (Alternatively, in case the Indian Subsidiary Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, Bidder has the option of submitting a "Letter of Undertaking" for support from the QSTGM as per format enclosed at Attachment 3A11.a instead of Attachment 3A11, in line with Note 9 to clause 1.0.0 of item 4 of BDS)
2.00.00	*Equity participation of other Promoter having Equity equal to or more than 25% in the Indian Subsidiary Company
2.01.00	*Lock in period for above equity participation from the date of incorporation.
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure_____of this Attachment

2.1.0 *(b) We confirm that *our Associate is a Joint Venture Company registered in India / *our Associate (QSTGM) have registered an Indian JV Company in India, as per Companies Act of India, for manufacturing supercritical steam generator sets covering the type, size and rating specified.

The Joint Venture (JV) Company is promoted by (i) M/s....., an Indian Company registered in India under the Companies Act of India and (ii) M/s, a QSTGM, who meets the requirement of clause 1.1.0 (B) of Item 4.0 of BDS and whose details are furnished in clause 2.2.0 below.

The JV Company have obtained certificate for commencement of Business in India as on the date of Techno-Commercial bid opening, (Applicable in case, the JV Company is incorporated as a public limited Company).

We confirm that the QSTGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the Indian JV Company for a lock-in period of 7 years from the date of incorporation of Indian JV Company or up to the end of the defect liability period of the contract whichever is later.

Further, M/s....., one of the promoters is a majority stakeholder who have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The details of the Indian Joint Venture (JV) company are as follows :

S.No.	Item Description

1.00.00 Date of Incorporation of JV Company

1.01.00 Equity participation of **QSTGM** in the JV company (In percentage of the total equity)

1.02.00 Lock in period for above equity participation from the date of incorporation

(Bidder to furnish a letter of undertaking as per format enclosed at Attachment-3A-11 as per Note (9) of Clause 1.0.0, Item 4 of BDS for QSTGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM)

(Alternatively, in case the Indian JV Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased

Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, Bidder has the option of submitting a "Letter of Undertaking" for support from the QSTGM as per format enclosed at Attachment 3A11.a instead of Attachment 3A11, in line with Note 9 to clause 1.0.0 of item 4 of BDS)

S.No.	Item Description
2.00.00	Equity participation of the Majority Stake Holder having Equity more than 51% in JV Company
2.01.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment-3A-11 as per Note 9 of clause 1.0.0, Item 4 of BDS for Majority Stake Holder's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the Majority Stake Holder)
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of JV company is enclosed at Annexure_____ of this Attachment
2.1.0**(b)(i)	We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company is an entity other than the QSTGM, and is an Indian Company and has executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro- chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening. The details are as follows :

*Bidder to furnish 2.1.0**(b)(i) & (ii) only when his Associate is a JV Company of QSTGM, as per clause no. 1.4.1(a), Item No. 4 of BDS.*

S.No.	Item Description	Project#1	Project#2	Project#3
1.00	Name of the reference station & its Location			
1.01	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.02	Name and designation of the responsible person in Owner's organisation			
1.03	Contract No. & date			
1.04	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.05	Starting date of Project			
1.06	Scheduled date of Commissioning			
1.07	Actual date of Commissioning			
1.08	Date of Commencement of successful Operation			
1.09	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			

S.No.	Item Description	Project#1	Project#2	Project#3
1.11	Necessary documentary evidence is support of above are attached at Annexure..... of this Attachment			

2.1.0**(b)(ii) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company, an entity other than the QSTGM, are an Indian Company. The said Indian JV Company's Parent Company M/s have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4,000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening.

We, on behalf of our Associate, confirm that the said Indian JV Company is a wholly owned subsidiary of their parent company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the said Indian JV Company (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

The details are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax no., Tel. no. and e-mail			
1.2	Name and designation of the responsible person in Owner's organisation			

2.1.0**(b)(ii) is to be filled in only in pursuance of Note 6 of clause no. 1.0.0 of Item no. 4 of BDS.

S.No.	Item Description	Project#1	Project#2	Project#3
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			
1.13	Date of Incorporation of JV Company			

S.No.	Item Description	Project#1	Project#2	Project#3
1.14	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			
1.14	Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later? (Bidder to furnish a letter of undertaking as per format enclosed at Attachment-3A-11 for equity participation of parent company in the wholly owned subsidiary company along with lock in period of such equity in compliance to note 6 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)	Yes*/No	*Yes*/No*	Yes*/No*
2.2.0	We confirm that the QSTGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of (i) at least one (1) number Super Critical Steam turbine of tandem compound, condensing, reheat type of 500 MW or above capacity with main steam pressure of 225 Kg/cm ² (gauge) or higher and main steam / reheat temperature of 565° C / 565° C or higher and (ii) at least one (1) number of generator of two pole, Thermal class 155 (F) winding insulation, hydrogen / water cooled stator and hydrogen / water cooled rotor of 500 MW or above capacity. These steam turbine and generator are in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening. The details are as follows :-			

S No.	Item Description	For Stean Turbine	For Generator (if separate station)
		----- Station-1, 2, 3	----- Station-1, 2, 3
1.00.00	Name, address, e-mail, Tel. No. and Fax No. of the QSTGM		
1.1.0	Name and Designation of the responsible person in QSTGM		
1.1.1	Name of the reference station and its location		
1.1.2	Name, address, Fax No., e-mail and Tel. No. of Owner of the reference station		
1.1.3	Name, address, Fax No., e-mail and Tel. No. of intermediary organisation in case the award has been recieved by QSTGM from intermediary organisation		
1.2.0	Name and Designation of the responsible person in Owner's organisation		
1.2.1	Name and Designation of the responsible person in intermediary organisation.		
1.03.00	No. of Steam Turbine Generator Sets supplied by QSTGM for the station		
1.04.00	Contract No. and Date		
1.05.00	Capacity in MW of Unit		
1.06.00	Starting date of project		
1.07.00	Scheduled date of commissioning		

S No.	Item Description	For Stean Turbine	For Generator (if separate station)
		----- Station-1, 2, 3	----- Station-1, 2, 3
1.08.00	Actual date of commissioning		
1.09.00	Date of commencement of successful operation		
1.10.00	Scope of work executed by QSTGM for the aforesaid Steam Turbine Generator Set includes the following :		
(a)	Designed	*Yes/*No	*Yes/*No
(b)	Engineered	*Yes/*No	*Yes/*No
(c)	*Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No
(e)	*Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No
f)	Whether the plant is in successful operation for a period of one (1) year (minimum) as on date of Techno-Commercial bid opening		Yes*/No*

(**In case the QSTGM has acted as advisor for erection / commissioning of reference Steam Turbine & Generator, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS)

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.00.00 Details of Turbine				
2.01.00	Steam Turbine make			
2.02.00	Tandem compound	*Yes/*No	*Yes/*No	*Yes/*No
2.03.00	No. of Reheat			
2.4.0	(i) No. of Cylinders:			
	(a) HP			
	(b) IP			
	(c) Combined HP-IP			
	(d) LP			
	(ii) Whether HP and IP cylinders are combined or separate			
2.5.0	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP turbine (if applicable)			
	(d) LP Turbine			
2.06.00	Main steam pressure (gauge)			
2.07.00	Main steam temperature (deg.C)			
2.08.00	Reheat Steam temperature (deg.C)			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.09.00	Condensing type	*Yes/*No	*Yes/*No	*Yes/*No
2.10.00	Rated speed (RPM) and operating frequency range (Hz)			
2.11.00	No. of Steam Extractions			
2.12.00	Steam Turbine and Generator Directly coupled	*Yes/*No	*Yes/*No	*Yes/*No
2.13.00	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.00.00	Generator Details			
3.01.00	Generator make and model No.			
3.02.00	Rated MVA			
3.03.00	Rated Power Factor			
3.04.00	MW rating			
3.05.00	Rated voltage (kV)			
3.06.00	No. of phases			
3.07.00	No. of poles			
3.08.00	Mounting	*Horizon- tally / *Vertical	*Horizon- tally / *Vertical	*Horizon- tally / *Vertical
3.09.00	Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.10.00	Cylindrical rotor type	*Yes/*No	*Yes/*No	*Yes/*No
3.11.00	Cooling medium			
	(a) Stator			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	(b) Rotor			
3.12.0	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			
3.13.00	Schedule date of Commissioning			
3.14.00	Actual date of commissioning			
3.15.00	Date of commencement of successful operation			
4.00.00	Certificate(s) from the Owner that the aforesaid Steam Turbine Generator Set / Steam Turbine / Generator Set (as applicable) is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial Bid Opening is furnished at Annexure..... to this Attachment			
4.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
4.2.0	Documentary evidence in case the award for reference work (steam generator set) has been received by Bidder (*Indian Subsidiary Company of QSTGM) / *Associate (*QSTGM / Indian *Subsidiary / *JV Company of QSTGM) from Owner of plant or any other intermediary organization			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	(i) Certificate from *Owner of the plant or *intermediary organisation to be furnished by *Bidder / *Bidder on behalf of its Associate in support of the claim of meeting requirement at clause 1.1.0 item 4 of BDS as the case may be, enclosed at Annexure... to this Attachment			
	(ii) Certificate from Owner of the plant to be furnished by *Bidder / *Bidder on behalf of its Associate for the successful operation of the Steam Turbine Generator Set / Steam Turbine / Generator Set (as applicable) as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure.... to this Attachment			

2.3.0* We confirm that, We (an Indian subsidiary company of a QSTGM) / *our Associate (an Indian *Subsidiary / *JV Company of QSTGM) / *our Associate's (QSTGM's) *Indian subsidiary / *JV Company, whose details are indicated at *2.1.0(a) / *2.1.0(b) above, have registered **another Indian manufacturing Subsidiary Company** M/s....., as per Companies Act of India for manufacturing **supercritical steam turbine generator sets** in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India (Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

2.3.0 is to be filled in only in pursuance of Note 8 for clause no. 1.0.0 of Item no. 4 of BDS.

We confirm that M/s....., the manufacturing subsidiary company shall remain a subsidiary of the Indian Subsidiary / JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Manufacturing Subsidiary Company are as follows :

S.No.	Item Description	
1.00.00	Date of Incorporation of Indian Manufacturing Subsidiary Company	
1.01.00	Equity participation of the *Indian Subsidiary / *JV company in the Indian Manufacturing Subsidiary Company (in percentage of the total equity)	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian manufacturing subsidiary company or upto the end of defect liability period of the contract whichever is later ?	*Yes/*No
	(Bidder to furnish letter of undertaking as per format enclosed at Attachment 3A-11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to note 8 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Indian *Subsidiary / *JV Company)	
2.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure _____ of this Attachment	

S.No.	Item Description
2.01.00	Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of Indian manufacturing subsidiary company is enclosed at Annexure_____of this Attachment

2.4.0** We confirm that M/s....., **a super critical steam turbine manufacturer** meets the requirements of clause 1.1.1(B) **except for generator**. Hence, as per clause 1.3.3 of item no. 4.0 of BDS, the Subsidiary Company / JV Company (as the case may be) have associated with and have a Technology Transfer agreement with M/s....., (Qualified Generator Manufacturer) meeting the requirements of clause 1.1.4 / 1.3.3 of item no. 4.0 of BDS fully in respect of generator. The details are as follows :-

The Qualified Generator Manufacturer have minimum 10% equity participation and shall continue to maintain a minimum equity participation of 10% in the Indian Subsidiary / JV Company (as the case may be), for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary / JV Company (as the case may be) or up to the end of defect liability period of the contract whichever is later.

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.00.00	Name of the reference station and its location			
1.1.0	Name, address, email, Fax No. and Tel. No. of Owner of Plant			
1.1.1	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by Qualified Generator Manufacturer from intermediary organisation			
1.2.0	Name and Designation of the responsible person in Owner's organisation			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.02.01	Name and Designation of the responsible person in intermediary organisation.			
1.03.00	No. of Generator Sets supplied			
1.04.00	Contract No. and Date			
1.05.00	Capacity in MW of Unit			
1.06.00	Starting date of project			
1.07.00	Scheduled date of commissioning			
1.08.00	Actual date of commissioning			
1.09.00	Date of commencement of successful operation			
1.10.00	Scope of work for the aforesaid Generator Set includes the following:			
	(a) Designed	*Yes/*No		
	(b) Engineered	*Yes/*No		
	(c) *Manufactured / *Got Manufactured	*Yes/*No		
	(d) *Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No		
	(e) *Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/*No		

** Necessary Documents / certificate from the client, in support of Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS are Attached at Annexure..... of this Attachment.

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.02.00	Details of Generator			
1.02.01	Generator make and model No.			
1.02.02	Rated MVA			
1.02.03	Rated Power Factor			
1.02.04	MW rating			
1.02.05	Rated voltage (kV)			
1.02.06	No. of phases			
1.02.07	No. of poles			
1.02.08	Mounting	*Horizontally /*Vertically	*Horizontally /*Vertically	*Horizontally /*Vertically
1.02.09	Installation * Indoor/	* Indoor/ *Outdoor	* Indoor/ *Outdoor	*Outdoor
1.02.10	Cylindrical rotor Type	* Yes/*No	*Yes/*No	*Yes / *No
1.02.11	Cooling medium			
	(a) Stator			
	(b) Rotor			
1.2.12	Thermal class of Insulation			
	(a) Stator			
	(b) Rotor			
1.2.13	Date of Commissioning			
1.2.14	Date of Commencement of successful operation			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.00.00	Certificate(s) from the Owner that the aforesaid Generator Set is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial Bid Opening is furnished at Annexure..... to this Attachment			
3.00.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			

2.5.0 *We confirm that our Associate (QSTGM) is seeking qualification as holding company (singularly or collectively) with their subsidiaries (held directly or indirectly) as per Note No. 4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

2.5.1	Associate (QSTGM) and their Subsidiary's(ies') Experience details in respect of meeting requirement for QSTGM [as per clause 1.1.1(B)] , item 4 of BDS	(To be filled at page to of this Attachment)
2.5.2	Details of Subsidiary Company / Joint Venture Company registered by the Associate (QSTGM) in India meeting requirement of Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS	(To be filled at page to of this Attachment)
2.5.3	a) *Name, Address, e-mail, Fax, Tel. No. of the Subsidiary meeting the QR for supercritical Steam Turbine Manufacturer as per clause 1.1.0 of BDS b) *Name, Address, e-mail, Fax, Tel. No. of the Subsidiary meeting the QR for Generator Manufacturer as per clause 1.1.0 of BDS	
2.5.4	a) *Name, address, Telephone No., Fax and e-mail of subsidiary company owning the technology	

for supercritical steam turbine

- b) *Name, address, Telephone No.,
Fax and e-mail of subsidiary

company owning the technology
for generator

*We have submitted the experience details in support of Qualifying Requirement at 2.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 2.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (**Qualified Steam Turbine Generator Manufacturer**) and above subsidiaries.

2.6.0* We confirm that our Associate i.e. M/s have manufactured / supplied in India Eight (8) Nos. supercritical Steam Turbine Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Turbine Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Turbine Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 (a) of Item no. 4 of BDS. Further, we confirm that we shall offer only the type of steam Turbine generator for which our associate is qualified.

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

1.00.00 Name and location of the reference
Station in which the unit is located

1.1.0 Name, address, email, Tel. no.
and Fax of owner of the station

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

1.1.1 Name and Designation of the

responsible person in owner's
organisation

1.1.2	Capacity of Steam Turbine Generator Unit in MW	
1.1.3	Contract No. & Date	
1.1.4	Starting date of project	
1.1.5	Scheduled date of Commissioning	
1.1.6	Actual date of Commissioning	
1.1.7	Date of commencement of successful operation	
1.1.8	Date of commencement of Commercial operation (COD)	
1.1.9	Whether the Steam Turbine Generator is supercritical	Yes*/No*
1.1.10	Scope of work executed by *us / or *associate:	
	a) Manufactured	Yes*/No*
	b) Supplied	Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.2.0	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set has successfully completed Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.3	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	
2.00.00 Details of Turbine		
2.01.00	Steam Turbine make	
2.02.00	Tandem compound	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.03.00	No. of Reheat	
2.4.0	(i) No. of Cylinders:	
	(a) HP	
	(b) IP	
	(c) Combined HP-IP	
	(d) LP	
	(ii) Whether HP and IP cylinders are combined or separate	
2.5.0	Module Number	
	(a) HP Turbine	
	(b) IP Turbine	
	(c) Combined HP-IP turbine (if applicable)	
	(d) LP Turbine	
2.06.00	Main steam pressure (gauge)	
2.07.00	Main steam temperature (deg.C)	
2.08.00	Reheat Steam temperature (deg.C)	
2.9.0	Condensing type	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.10.00	Rated speed (RPM) and operating frequency range (Hz)	
2.11.00	No. of Steam Extractions	
2.12.00	Steam Turbine and Generator Directly coupled	Yes*/No*
2.13.00	Steam Turbine Generator Set Installation (Indoor / Outdoor)	
3.00.00	Generator Details	
3.01.00	Generator make and model No.	
3.02.00	Rated MVA	
3.03.00	Rated Power Factor	
3.04.00	MW rating	
3.05.00	Rated voltage (kV)	
3.06.00	No. of phases	
3.07.00	No. of poles	
3.08.00	Mounting (Horizontal / Vertical)	
3.09.00	Installation (Indoor / Outdoor)	
3.10.00	Cylindrical rotor type	Yes*/No*
3.11.00	Cooling medium	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	(a) Stator	
	(b) Rotor	
3.12.0	Thermal Class of insulation	
	(a) Stator	
	(b) Rotor	
3.13.00	Schedule date of Commissioning	
3.14.00	Actual date of commissioning	
3.15.00	Date of commencement of successful operation	
4.00.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	

#2.7.0 Undertaking w.r.t Deed(s) of Joint Undertaking (DJU) executed by us, our QSTGM, our Associate/our Associate's QSTGM / Indian Subsidiary / JV Company (as the case may be), Other Promoter having 25% or higher Equity Participation in the Indian Subsidiary / JV Company (as the case may be),
*Qualified Generator Manufacturer, *subsidiaries of Holding Company and *the Indian Manufacturing Subsidiary Company and **Indian Subsidiary Company / JV Company / Indian Manufacturing Company (as per 1.6.1 of item 4 of BDS)" as per clause 1.3.2 and/or 1.3.3 and/or applicable notes for clause no. 1.0.0 of Item No. 4 of BDS, is enclosed at Annexure _____ to this Attachment.

#2.8.0 Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of clause 1.6.1 and/or Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.

Bidder to strike out whichever is not applicable.

* Bidder to strike out whichever is not applicable

Date : (Signature).....
Place : (Printed Name).....
(Designation).....
(Common seal).....

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

Note:

1. For the Indian Subsidiary (ies) /JV Company (ies), wherever the lock in period for maintaining equity in compliance to Clause 1.3.1(a) / 1.3.3 / 1.4.1(a) / 1.4.3 / 1.5.1(a) / 1.5.3 (as per item 4 of BDS) are mentioned, the following clause is also applicable:

In case the Indian Subsidiary (ies) /JV Company (ies) (formed for manufacturing Super Critical Steam Generator and/or supercritical Steam Turbine Generator sets) meets the criteria specified under Note No. 13 of "Notes for clause 1.0.0" (as per item 4 of BDS) and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 (as per item 4 of BDS), then the bidder would have the option of submitting "Letter of Undertaking" for support from the QSGM and/or QSTGM and/or QGM, as applicable, along with the techno-commercial bid as per the format enclosed at Attachment 3A11(A) in the bidding documents instead of the undertakings / documents for maintaining the minimum equity for the lock-in period mentioned / maintaining the subsidiary status, wherever indicated, in respect of QSGM and/or QSTGM and/or QGM, as applicable.

2. Route 1.2.0 has not been used for the purpose of qualification in Qualifying Requirements. Wherever Clause 1.2.0, 1.2.1, 1.2.2 & 1.2.3 (as per item 4 of BDS) have been referred to either directly or indirectly in any qualification routes / financial criteria, the same should be deemed to have been omitted and qualifying requirements should be read accordingly.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(Experience details for an Indian JV Company of a Qualified Steam Generator Manufacturer (QSGM) and/or a Qualified Steam Turbine Generator Manufacturer (QSTGM) as Bidder, as per Clause 1.4.0, Item No. 4.0 of BDS)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

1.0.0 *We, M/s....., an Indian Joint Venture (JV) Company of a Qualified Steam Generator Manufacturer (QSGM), are seeking Qualification as per clause 1.4.0, Item No. 4 of BDS.

*We, M/s..... (an Indian JV Company of a QSTGM as Bidder), are associating with M/s(*Qualified Steam Generator Manufacturer / *Indian Subsidiary of a Qualified Steam Generator Manufacturer / *Indian JV Company of a Qualified Steam Generator Manufacturer) and shall source the Steam Generator Set from M/s(Associate) as per clause 1.4.1(b) item no. 4 of BDS. The details are as follows:

1.1.0 *(a) We confirm that *we / *our Associate *are / *is an Indian Joint Venture Company registered in India / *our Associate (QSGM) have registered an Indian JV Company in India, as per Companies Act of India, for manufacturing supercritical steam generator sets covering the type, size and rating specified.

The Joint Venture (JV) Company is promoted by (i) M/s....., an Indian Company registered in India under the Companies Act of India and (ii) M/s , a QSGM, who meets the requirement as per the details furnished in clause 1.1.0 above.

The JV Company have obtained certificate for commencement of Business in India as on the date of Techno-Commercial bid opening, (Applicable in case, the JV Company is incorporated as a public limited Company).

We confirm that the QSGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

Further, M/s....., one of the promoters is a majority stakeholder who have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The details of the Indian Joint Venture (JV) company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of JV Company
1.01.00	Equity participation of QSGM in the JV company (In percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/ 1.4.1(a) of item 4 of BDS supported by Board Resolution of the QSGM) (Alternatively, in case the Indian JV Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, Bidder has the option of submitting a "Letter of Undertaking" for support from the QSGM as per format enclosed at Attachment 3A11.a instead of Attachment 3A11, in line with Note 9 to clause 1.0.0 of item 4 of BDS)
2.00.00	Equity participation of the Majority Stake Holder having Equity more than 51% in JV Company
2.01.00	Lock in period for above equity participation from the date of incorporation

S.No.	Item Description
	(Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for Majority Stake Holder's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/ 1.4.1(a) of item 4 of BDS supported by Board Resolution of the Majority Stake Holder)
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of JV company is enclosed at Annexure_____ of this Attachment

1.1.0**(a)(i) We confirm that M/s....., the majority stake holder in the said JV Company, is an entity other than the QSGM, and is an Indian Company and has executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the the date of Techno-Commercial bid opening. The details are as follows :

*Bidder to furnish 1.1.0**(a)(i) & (ii) only when he / his Associate is a JV Company of QSGM, as per clause 1.4.1(a), item 4 of BDS;*

S.No.	Item Description	Project#1	Project#2	Project#3	
	Name of the reference station & its Location				1.00
1.01	Owner's Name and its address, Fax No., Tel. No. and e-mail				
1.02	Name and Designation of the responsible person in Owner's organisation				
1.03	Contract No. & date				
1.04	(i) Nature/area of EPC Project				
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No	
1.05	Starting date of Project				
1.06	Scheduled date of Commissioning				
1.07	Actual date of Commissioning				
1.08	Date of Commencement of successful Operation				
1.09	Value of above projects (in INR Million)				
1.10	Scope of work executed				
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No	
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No	
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No	
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening				

S.No.	Item Description	Project#1	Project#2	Project#3
1.11	Necessary documentary evidence is support of above are attached at Annexure..... of this Attachment			

1.1.0**(a)(ii) We confirm that M/s....., the majority stake holder in the said JV Company, an entity other than the QSGM, are an Indian Company. The said Indian JV Company's Parent Company M/s have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4,000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening.

We confirm that the Indian JV Company is a wholly owned subsidiary of their parent company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the said Indian JV Company (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

The qualification details of Parent Company of Indian JV Company are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and Designation of the responsible person in Owner's organisation			

1.1.0**(a)(ii) is to be filled in only in pursuance of Note No. 6 of clause no. 1.0.0 of Item no. 4 of BDS.

S.No.	Item Description	Project#1	Project#2	Project#3
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			
1.13	Date of Incorporation of JV Company			
1.14	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			

1.15 Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later? *Yes/*No

(Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for equity participation of parent company in the wholly owned subsidiary company along with lock in period of such equity in compliance to note 6 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)

1.1.0 *(b) We confirm that *our Associate is an Indian Subsidiary Company of M/s..... (QSGM) registered in India / *our Associate (QSGM) have registered an Indian Subsidiary Company in India as per Companies Act of India, for manufacturing **Supercritical Steam Generator sets** covering the type, size and rating specified.

Further, the Indian Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... is a subsidiary company of M/s..... (QSGM) and shall remain a subsidiary company of the QSGM for a minimum period of 7 years from the date of incorporation of the Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of Indian Subsidiary Company
1.01.00	Equity participation of QSGM in the Indian subsidiary company (In percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSGM's equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSGM) (Alternatively, in case the Indian Subsidiary Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, Bidder has the option of submitting a "Letter of Undertaking" for support from the QSGM as per format enclosed at Attachment 3A11.a instead of undertaking/documents/ Board Resolution regarding maintaining the Subsidiary Status, in line with Note 9 to clause 1.0.0 of item 4 of BDS)
2.00.00	*Equity participation of other Promoter having Equity equal to or more than 25% in the Indian Subsidiary Company
2.01.00	*Lock in period for above equity participation from the date of incorporation
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment

S.No.	Item Description
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure_____of this Attachment

1.2.0 We confirm that the QSGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of at least one (1) number of pulverised coal fired supercritical Steam Generator having rated capacity of 1500 tonnes of steam per hour or above. Further, such Steam generator is of the type specified, i.e. single pass (tower type) or two pass type using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing, and is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

*Further, we confirm that reference Steam Generator is provided with evaporator suitable for variable pressure operation (sub-critical and super-critical pressure ranges). Also, we confirm that we have offered steam generator of the same type, having same type of water wall tubing for which reference of Steam Generator has been furnished below The details are as follows :-

Sl.	Item Description	Station-1	Station-2	Station-3	No.
1.00.00	Name, address, e-mail, Tel. No. and Fax No. of the QSGM				
1.1.0	Name and Designation of the responsible person in QSGM				
1.1.1	Name of the reference station and its location				
1.1.2	Name, address, e-mail, Fax No. and Tel. No. of Owner of station				
1.1.3	Name and Designation of the responsible person in Owner's organisation				

Sl.	Item Description	Station-1	Station-2	Station-3	No.
1.02.00	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by QSGM from intermediary organisation				
1.02.01	Name and Designation of the responsible person in intermediary organisation				
1.03.00	No. of units & capacity of each unit in MW				
1.04.00	No. of steam generator sets supplied by QSGM for the reference station				
1.05.00	Contract No. & Date				
1.06.00	Starting date of Project				
1.07.00	Scheduled date of Commissioning				
1.08.00	Actual date of Commissioning				
1.09.00	Date of commencement of successful operation				
1.10.00	Whether the Plant is coal fired	Yes*/No*	Yes*/No*	Yes*/No*	
1.11.00	Scope of work executed by QSGM for the aforesaid Steam Generator includes the following :				
	a) Designed	Yes*/No*	Yes*/No*	Yes*/No*	

Sl.	Item Description	Station-1	Station-2	Station-3	No.
b)	Engineered	Yes*/No*	Yes*/No*	Yes*/No*	
c)	*Manufactured/*Got manufactured	Yes*/No*	Yes*/No*	Yes*/No*	
d)	*Erection/*Supervised erection/**Acted as Advisor for erection	Yes*/No*	Yes*/No*	Yes*/No*	
e)	*Commissioned/*Supervised commissioning/**Acted as advisor for commissioning	Yes*/No*	Yes*/No*	Yes*/No*	
f)	Whether the plant is in successful operation for a period of one (1) year (minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*	

(**In case the QSGM has acted as advisor for erection / commissioning of reference Steam Generator & auxiliaries, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment pursuant to Note No. 2 for Clause 1.0.0, Item No. 4 of BDS.)

2.00.00 Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)

2.01.00 Main Steam Temperature at SH outlet (°C)

2.02.00 Main Steam Pressure at SH outlet [kg/cm² (a)]

2.03.00 Reheat steam flow (T/Hr.)

2.04.00 a) Reheater outlet pressure [kg/cm² (a)]

Sl.	Item Description	Station-1	Station-2	Station-3	No.
	b) Reheater outlet temperature (°C)				
2.05.00	Whether balanced draft type or not				
2.6.0	Type of Steam Generator				
	i) Single pass (tower type) or two pass type (must match with offered type)				
	ii) Once through type	Yes*/No*	Yes*/No*	Yes*/No*	
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*	
(In case the answer to above clause (iii) is "No", in such a case, the Bidder on behalf of the QSGM shall furnish additional data in support of requirements indicated in clause 1.5.0 to this attachment)					
2.07.00	Type of circulation system (Natural or Forced/Assisted)				
2.08.00	Type of Water wall tubes [spiral wound (inclined) or vertical plain or vertical rifled] (must match with offered type)				
2.09.00	Minimum mass flow through the water wall tubes Kg/sec./m ²				
2.10.0	Type of coal used				
	i) Max. HHV (Kcal/Kg)				
	ii) Min. HHV (Kcal/Kg)				
	iii) Max. Ash content (%)				

Sl.	Item Description	Station-1	Station-2	Station-3	No.
	iv) Max. total moisture content (%)				
	v) Volatile matter content (%)				
2.10.1	Type of oil used				
	i) HHV (Kcal/Kg)				
	ii) Sulphur content (%)				
	iii) Viscosity in centistoke at 50°C (Max.°C)				
	iv) Pour point (°C)				
	v) Flash point (°C)				
2.11.0	Fuel (other than pulverised coal fired)				
2.11.1	Type of fuel used				
2.11.2	Firing rate				
2.11.3	Calorific value of fuel (Kcal/kg)				
2.12.00	Designed Boiler efficiency and corresponding GCV				
2.13.00	Tested boiler efficiency and corresponding GCV				
2.14.00	Tested boiler efficiency corrected to design conditions and corresponding GCV				
2.15.00	a) Whether used for two shifting				

Sl.	Item Description	Station-1	Station-2	Station-3	No.
	b) If yes, number of such operations it has been designed for				
	c) No. of actual two shifting cycles it has actually operated on till date				
2.16.0	Minimum start-up time achieved				
	i) Cold (after 72 hrs. of unit shut down)				
	ii) Warm (after 36 hrs. of unit shut down)				
	iii) Hot (after 8 hrs. of unit shut down)				
2.17.00	Availabilities of steam generator for last two years				
2.18.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators				
3.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished alongwith bid at Annexure				
3.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment				

Sl.	Item Description	Station-1	Station-2	Station-3	No.
3.2.0	Documentary evidence in case the award for reference work (steam generator set) has been received by *Bidder (Indian JV Company of QSGM) / *Associate (*QSGM / Indian *Subsidiary / *JV Company of QSGM) from Owner of plant or any other intermediary organization				
	(i) Certificate from *Owner of the plant or *intermediary organisation to be furnished by *Bidder / *Bidder on behalf of its Associate in support of the claim of meeting requirement of Note 3 of clause 1.0.0, item 4 of BDS as the case may be, enclosed at Annexure..... to this Attachment				
	(ii) Certificate from Owner of the plant to be furnished by *Bidder / *Bidder on behalf of its Associate for the successful operation of the Steam Generator Set as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment				

Notes :

1. Wherever the term 'coal fired' is appearing above, "coal" shall be deemed to also include bituminous Coal/Sub Bituminous Coal/Brown Coal/Lignite.

1.3.0 *We confirm that *we (an Indian JV Company of a QSGM) / *our Associate (an Indian *Subsidiary / *JV Company of a QSGM) / *our Associate's (QSGM's) *Indian subsidiary / *JV Company, whose details are indicated at *1.1.0(a) / *1.1.0(b) above have registered another **Indian Manufacturing Subsidiary Company** M/s....., as per Companies Act of India for manufacturing **supercritical steam generator sets** in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India (Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that the manufacturing company shall remain a subsidiary of Indian *Subsidiary / *JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian Manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Manufacturing Subsidiary Company are as follows :

S.No.	Item Description	
1.00.00	Date of Incorporation of Indian Manufacturing Subsidiary Company	
1.01.00	Equity participation of the Indian *Subsidiary / *JV company in the Indian Manufacturing Subsidiary Company (in percentage of the total equity)	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian Manufacturing Subsidiary Company or upto the end of defect liability period of the contract whichever is later ?	*Yes/*No

1.3.0 is to be filled in only in pursuance of Note 8 for clause.no. 1.0.0 of Item 4 of BDS.

S.No.	Item Description

(Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to note 8 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Indian *Subsidiary / *JV Company

2.00.00 Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment

2.01.00 Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of Indian manufacturing subsidiary company is enclosed at Annexure_____ of this Attachment

1.4.0 *We confirm that our Associate (QSGM) is seeking qualification as holding company (singularly or collectively) with its subsidiaries (held directly or indirectly) as per notes No.4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

1.4.1 Associate (QSGM) and their subsidiary's (ies') (To be filled at page to Experience Details in respect of meeting requirement for QSGM of this Attachment) (as per clause **1.1.1(A)**), item 4 of BDS

1.4.2 Details of *Subsidiary Company/*Joint Venture Company registered by the Associate (QSGM) in India meeting requirement of Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS (To be filled at page to of this Attachment)

1.4.3 *Name, Address, email, Fax, Tel. No. of the Subsidiary meeting the QR for QSGM as per clause 1.1.0 of BDS

- 1.4.4 *Name, address, Telephone No.,
Fax and email of subsidiary company
owning the technology for
supercritical steam generators

*We have submitted the experience details in support of Qualifying Requirement at 1.2.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 1.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (Qualified Steam Generator Manufacturer) and above subsidiaries.

TO BE FILLED IN BY THE BIDDER WHO / WHOSE ASSOCIATE IS SEEKING QUALIFICATION AS PER CLAUSE 1.1.1(A), ITEM 4 OF BDS READ IN CONJUNCTION WITH NOTE 5 TO CLAUSE 1.0.0, ITEM 4 OF BDS (I.E. IF THE ANSWER TO SUB-CLAUSE 2.06.00(iii) TO CLAUSE 1.2.0 ABOVE IS "NO")

- 1.5.0** We confirm that M/s _____ (supercritical Steam Generator Manufacturer) meets all the requirement as per 1.1.1(A), Item 4 of BDS **except that the evaporator** indicated in the reference steam generator is not designed for variable pressure operation and is designed for constant pressure (Universal Pressure) operation only, and is seeking qualification along with the original technology owner (Licensor) with whom he has an ongoing license agreement (which covers technology transfer), as on the date of Techno-Commercial bid opening, for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges).

Further, we confirm that original technology owner (Licensor) has experience of providing variable pressure design steam generator technology for at least one (1) no. of pulverised coal fired supercritical steam generator for a 1500 T/hr or higher capacity using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing with the evaporator suitable for variable pressure operation in sub-critical and super-critical pressure ranges and which is/are in successful operation for a period of not less than one (1) year prior to the date of **Techno-Commercial** bid opening. The details of Licensor and his experience details are as follows:-

I. Details of Technology Owner (Licensor)

1.01.00 Name of the original technology owner (Licensor)

1.02.00 Address, Email ID & Tel No. & Fax No.

1.03.00 Name and Designation of the Responsible person in the Organization

1.04.00 Licensing agreement for max. Capacity rating of Steam Generator (in MW)

1.05.00 Date of Start of Licensing agreement

1.06.00 Date of End of Licensing agreement

1.07.00 Whether Scope of licensing agreement covers for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges). *Yes/*No

1.08.00 Copy of relevant portion of Licensing agreement attached at Annexure.....

Sl.	Item Description	Station-1	Station-2	Station-3	No.
II.	Details of experience of Technology Owner (Licensor)				
1.01.00	Name of the reference station and its location				
1.02.00	Client name and its address, Fax No. & Tel.No., email ID				
1.03.00	(i) Actual date of completion				
	(ii) Date of commencement of Successful operation				
1.04.00	Whether the Plant is in Successful operation	Yes*/No*	Yes*/No*	Yes*/No*	
1.05.00	Scope of work executed for the aforesaid Steam Generator includes the following:				
	i) Designed	Yes*/No*	Yes*/No*	Yes*/No*	
	ii) Engineered	Yes*/No*	Yes*/No*	Yes*/No*	
	iii) Whether the plant is in successful operation for a period of one (1) year (Minimum) as on date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*	
1.06.00	i) Supercritical Steam Generator	Yes*/No*	Yes*/No*	Yes*/No*	
	ii) Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)				

Sl.	Item Description	Station-1	Station-2	Station-3	No.
1.07.00	Type of Steam Generator				
	i) Single pass (tower type) or two pass type (must match with offered type)				
	i) Once through type	Yes*/No*	Yes*/No*	Yes*/No*	
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*	
1.08.00	Type of Water wall tubes (Spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)				
1.09.00	Type of firing (Coal)	Yes*/No*	Yes*/No*	Yes*/No*	
1.10.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial bid opening and caused no serious problem in past, is furnished alongwith bid at Annexure				
1.11.00	Undertaking w.r.t Deed of Joint Undertaking (DJU) as per performa enclosed at attachment-3I of Book 1 of 3, Sec-VII (Forms & Procedures) is furnished alongwith the bid at Annexure				

1.6.0* We confirm that our Associate i.e. M/s have manufactured / supplied in India Eight (8) Nos. supercritical Steam Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 of Item no. 4 of BDS. Further, we confirm that we shall offer only the type of steam generator for which our associate is qualified.

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.00.00	Name and location of the reference Station in which the unit is located	
1.1.0	Name, address, email, Tel. no. and Fax of owner of the station	
1.1.1	Name and Designation of the responsible person in owner's organisation	
1.1.2	Capacity of Steam Generator Unit in MW	
1.1.3	Contract No. & Date	
1.1.4	Starting date of project	
1.1.5	Scheduled date of Commissioning	
1.1.6	Actual date of Commissioning	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.1.7	Date of commencement of successful operation	
1.1.8	Date of commencement of Commercial operation (COD)	
1.1.9	Whether the Steam Generator is supercritical	Yes*/No*
1.1.10	Scope of work executed by associate:	
	a) Manufactured	Yes*/No*
	b) Supplied	Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No*
1.2.0	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set has successfully completed Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Details of Steam Generator

2.00.00 Name and Address of Steam Generator Set manufacturer

2.01.00 Steam Generator steam flow capacity at SH outlet (T/Hr.)

2.02.00 Main Steam Temperature at SH outlet (°C)

2.03.00 Main Steam Pressure at SH outlet [kg/cm²/(a)]

2.04.00 Reheat steam flow (T/Hr.)

2.05.00 a) Reheater outlet pressure [kg/cm² (a)]

b) Reheater outlet temperature (°C)

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.06.00	Whether balanced draft type or not	
2.7.0	Type of Steam Generator	
	i) Single pass (tower type) or two pass type (must match with offered type)	
	ii) Once through type	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*
2.08.00	Type of circulation system (Natural or Forced Circulation)	
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)	
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m ²)	
2.11.0	Type of coal used	
	i) Max. HHV (Kcal/Kg)	
	ii) Min. HHV (Kcal/Kg)	
	iii) Max. Ash content (%)	
	iv) Max. total moisture content (%)	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	v) Volatile matter content (%)	
2.11.1	Type of oil used	
	i) HHV (Kcal/Kg)	
	ii) Sulphur content (%)	
	iii) Viscosity in centistoke at 50°C (Max.°C)	
	iv) Pour point (°C)	
	v) Flash point (°C)	
2.12.0	Fuel (other than pulverised coal fired)	
2.12.1	Type of fuel used	
2.12.2	Firing rate	
2.12.3	Calorific value of fuel (Kcal/kg)	
2.13.00	Designed Boiler efficiency and corresponding GCV	
2.14.00	Tested boiler efficiency and corresponding GCV	
2.15.00	Tested boiler efficiency corrected to design conditions and corresponding GCV	
2.16.00	a) Whether used for two shifting	
	b) If yes, number of such operations it has been designed for	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	c) No. of actual two shifting cycles it has actually operated on till date	
2.17.0	Minimum start-up time achieved	
	i) Cold (after 72 hrs. of unit shut down)	
	ii) Warm (after 36 hrs. of unit shut down)	
	iii) Hot (after 8 hrs. of unit shut down)	
2.18.00	Availabilities of steam generator for last two years	
2.19.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators	
3.00.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	

#1.7.0 Undertaking w.r.t Deed(s) of Joint Undertaking (DJU) executed by us, our QSGM, *our Associate / *our Associate's QSGM / Indian *Subsidiary Company / *JV Company (as the case may be), Other Promoter having 25% or higher equity participation in the Indian Subsidiary / JV Company (as the case may be), *subsidiaries of Holding Company and *the Indian manufacturing subsidiary Company, *Technology Owner (Licensor) of supercritical steam generator as per clause 1.4.2 and *"Indian Subsidiary Company/ JV Company / Indian Manufacturing Company (as per 1.6.1 of item 4 of BDS)" and/or applicable Notes for clause no. 1.0.0 of Item No. 4 of BDS is enclosed at Annexure_____to this Attachment.

#1.8.0 Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of clause 1.6.1 and/or Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.

Bidder to strike out whichever is not applicable.

* Bidder to strike out whichever is not applicable

Date :

(Signature).....

Place :

(Printed Name).....
(Designation).....
(Common seal).....

2.0.0 *We, M/s....., an Indian Joint Venture (JV) Company of a Qualified Steam Turbine Generator Manufacturer (QSTGM), are seeking Qualification as per clause 1.4.0, Item No. 4 of BDS.

*We, M/s..... (an Indian JV company of a QSGM, as Bidder), are associating with M/s(*Qualified Steam Turbine Generator Manufacturer / *Indian Subsidiary of a Qualified Steam Turbine Generator Manufacturer / *Indian JV Company of a Qualified Steam Turbine Generator Manufacturer) and shall source the Steam Turbine Generator Set from M/s (Associate) as per clause 1.4.1(b) item no. 4 of BDS. The details are as follows:

2.1.0 *(a) We confirm that *we / *our Associate *are/is an Indian Joint Venture Company registered in India / *our Associate (QSTGM) have registered an Indian JV Company in India, as per Companies Act of India, for manufacturing supercritical steam turbine generator sets covering the type, size and rating specified.
The Joint Venture (JV) Company is promoted by (i) M/s....., an Indian Company registered in India under the Companies Act of India and (ii) M/s a QSTGM, who meets the requirement as per the details furnished in clause 1.1.0 above.

The JV Company have obtained certificate for commencement of Business in India as on the date of Techno-Commercial bid opening, (Applicable in case, the JV Company is incorporated as a public limited Company).

We confirm that the QSTGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the Indian JV Company for a lock-in period of 7 years from the date of incorporation of Indian JV Company or up to the end of the defect liability period of the contract whichever is later.

Further, M/s....., one of the promoters is a majority stakeholder who have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The details of the Indian Joint Venture (JV) company are as follows :

S.No. Item Description

1.00.00 Date of Incorporation of JV
 Company

S.No.	Item Description
1.01.00	Equity participation of QSTGM in the JV company (In percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 evidence for QSTGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM) (Alternatively, in case the Indian JV Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, Bidder has the option of submitting a "Letter of Undertaking" for support from the QSTGM as per format enclosed at Attachment 3A11.a instead of undertaking/documents/ Board Resolution regarding maintaining the minimum equity for lock-in period, in line with Note 9 to clause 1.0.0 of item 4 of BDS)
2.00.00	Equity participation of the Majority Stake Holder having Equity more than 51% in JV Company
2.01.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for Majority Stake Holder's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the Majority Stake Holder)

S.No.	Item Description
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment

S.No.	Item Description
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of JV company is enclosed at Annexure _____ of this Attachment

2.1.0**(a)(i) We confirm that M/s....., the majority stake holder in the said JV Company is an entity other than the QSTGM, and is an Indian Company and has executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening. The details are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and email			
1.2	Name and Designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No

*Bidder to furnish 2.1.0**(a)(i) & (ii) only when he / his Associate is a JV Company of QSTGM, as per cl. 1.4.1(a), item 4 of BDS;*

S.No.	Item Description	Project#1	Project#2	Project#3
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			

2.1.0**(a)(ii) We confirm that M/s....., the majority stake holder in the said JV Company, an entity other than the QSTGM, are an Indian Company. The said Indian JV Company's parent company M/s have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4,000 million or more. These projects are in successful operation for a period of not less than one year as on the date of Techno-Commercial bid opening.

We confirm that the said Indian JV Company is a wholly owned subsidiary of their parent company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the said Indian JV Company (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

The qualification details of Parent Company of Indian JV Company are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and Designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			

2.1.0**(a)(ii) is to be filled in only in pursuance of Note No. 6 of clause no. 1.0.0 of Item no. 4 of BDS.

S.No.	Item Description	Project#1	Project#2	Project#3
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			
1.13	Date of Incorporation of JV Company			
1.14	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			
1.15	Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later?			

(Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for equity participation of parent company in the wholly owned subsidiary company along with lock in period of such equity in compliance to note 6 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)

2.1.0 *(b) We confirm that *our Associate is an Indian Subsidiary Company of M/s..... (QSTGM) registered in India / *our Associate (QSTGM) have registered an Indian Subsidiary Company in India, as per Companies Act of India, for manufacturing **supercritical Steam Turbine Generator sets** covering the type, size and rating specified.

Further, the Indian Subsidiary Company have obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... is a subsidiary company of M/s.....(QSTGM) and shall remain a subsidiary company of the QSTGM for a minimum period of 7 years from the date of incorporation of the Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of Indian Subsidiary Company
1.01.00	Equity participation of QSTGM in the Indian subsidiary company (In percentage of the total equity)

S.No.	Item Description
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment-3A11 for QSTGM's equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM) (Alternatively, in case the Indian Subsidiary Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, Bidder has the option of submitting a "Letter of Undertaking" for support from the QSTGM as per format enclosed at Attachment 3A11.a instead of undertaking/documents/ Board Resolution regarding maintaining the Subsidiary Status, in line with Note 9 to clause 1.0.0 of item 4 of BDS)
2.00.00	*Equity participation of other Promoter having Equity equal to or more than 25% in the Indian Subsidiary Company
2.01.00	*Lock in period for above equity participation from the date of incorporation.
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment

S.No.	Item Description	Project#1	Project#2	Project#3
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure_____of this Attachment			

2.2.0 We confirm that the QSTGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of (i) at least one (1) number supercritical steam turbine of tandem compound, condensing, reheat type of 500 MW or above capacity with main steam pressure of 225 Kg/cm² (gauge) or higher and main steam / reheat temperature of 565° C / 565° C or higher and (ii) at least one (1) number of generator of two pole, Thermal class 155 (F) winding insulation, hydrogen / water cooled stator and hydrogen / water cooled rotor of 500 MW or above capacity. These steam turbine and generator are in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening. The details are as follows :-

S No.	Item Description	For Stean Turbine ----- Station-1, 2, 3	For Generator (if separate station) ----- Station-1, 2, 3
1.00.00	Name, address, e-mail, Tel. No. and Fax No. of the QSTGM		
1.01.00	Name and Designation of the responsible person in QSTGM		
1.1.0	Name of the reference station and its location		
1.1.1	Name, address, Fax No., e-mail and Tel. No. of Owner of the reference station		

S No.	Item Description	For Stean Turbine	For Generator (if separate station)
		----- Station-1, 2, 3	----- Station-1, 2, 3
1.1.2	Name, address, Fax No., e-mail and Tel. No. of intermediary organisation in case the award has been recieved by QSTGM from intermediary organisation.		
1.2.0	Name and Designation of the responsible person in Owner's organisation		
1.2.1	Name and Designation of the responsible person in intermediary organisation.		
1.03.00	No. of Steam Turbine Generator Sets supplied by QSTGM for the station		
1.04.00	Contract No. and Date		
1.05.00	Capacity in MW of Unit		
1.06.00	Starting date of project		
1.07.00	Scheduled date of commissioning		
1.08.00	Actual date of commissioning		
1.09.00	Date of commencement of successful operation		
1.10.0	Scope of work executed by us for the aforesaid Steam Turbine Generator Set includes the following :		
	(a) Designed	*Yes/*No	*Yes/*No

S No.	Item Description	For Stean Turbine ----- Station-1, 2, 3	For Generator (if separate station) ----- Station-1, 2, 3
(b)	Engineered	*Yes/*No	*Yes/*No
(c)	*Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No
(e)	*Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No
f)	Whether the plant is in successful operation for a period of one (1) year (minimum) prior to date of Techno-Commercial bid opening		Yes*/No*

(**In case the QSTGM has acted as advisor for erection / commissioning of reference Steam Turbine & Generator, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS)

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3

2.00.00 Details of Turbine

2.01.00 Steam Turbine make

2.02.00	Tandem compound	*Yes/*No	*Yes/*No	*Yes/*No

2.03.00 No. of Reheat

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.4.0	(i) No. of Cylinders:			
	(a) HP			
	(b) IP			
	(c) Combined HP-IP			
	(d) LP			
	(ii) Whether HP and IP cylinders are combined or separate			
2.5.0	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP turbine (if applicable)			
	(d) LP Turbine			
2.06.00	Main steam pressure (gauge)			
2.07.00	Main steam temperature (deg.C)			
2.08.00	Reheat Steam temperature (deg.C)			
2.09.00	Condensing type	*Yes/*No	*Yes/*No	*Yes/*No
2.10.00	Rated speed (RPM) and operating frequency range (Hz)			
2.11.0	No. of Steam Extractions			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.12.00	Steam Turbine and Generator Directly coupled	*Yes/*No	*Yes/*No	*Yes/*No
2.13.00	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.00.00	Generator Details			
3.01.00	Generator make and model No.			
3.02.00	Rated MVA			
3.03.00	Rated Power Factor			
3.04.00	MW rating			
3.05.00	Rated voltage (kV)			
3.06.00	No. of phases			
3.07.00	No. of poles			
3.08.00	Mounting	* Horizon- tally/*Ver- tical	* Horizon- tally/*Ver- tical	* Horizon- tally/*Ver- tical
3.09.00	Installation	* Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.10.00	Cylindrical rotor type	* Yes/*No	* Yes/*No	* Yes/*No
3.11.00	Cooling medium			
	(a) Stator			
	(b) Rotor			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
3.12.0	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			
3.13.00	Schedule date of Commissioning			
3.14.00	Actual date of commissioning			
3.15.00	Date of commencement of successful operation			
4.00.00	Certificate(s) from the Owner that the aforesaid Steam Turbine Generator Set /Steam Turbine / Generator Set (as applicable) is in successful operation for a period of not less than one (1) year prior date of Techno-Commercial Bid Opening is furnished at Annexure..... to this Attachment			
4.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
4.2.0	Documentary evidence in case the award for reference work (steam turbine generator set) has been received by *Bidder (Indian JV Company of QSTGM) / *Associate (*QSTGM / Indian *Subsidiary / *JV Company of QSTGM) from Owner of plant or any other intermediary organization			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	(i) Certificate from *Owner of the plant or *intermediary organisation to be furnished by *Bidder / *Bidder on behalf of its Associate in support of the claim of meeting requirement at clause 1.1.0 item 4 of BDS as the case may be, enclosed at Annexure..... to this Attachment			
	(ii) Certificate from Owner of the plant to be furnished by *Bidder / *Bidder on behalf of its Associate for the successful operation of the Steam Turbine Generator Set /Steam Turbine / Generator Set (as applicable) as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment			

2.3.0* We confirm that *we (an Indian JV Company of a QSTGM) / *our Associate (an Indian *Subsidiary / *JV Company of a QSTGM) / *our Associate's (QSTGM's) *Indian subsidiary / *JV Company, whose details are indicated at *2.1.0(a) / *2.1.0(b) above, have registered **another Indian Manufacturing Subsidiary Company** M/s....., as per Companies Act of India for manufacturing **supercritical steam turbine generator sets** in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India (Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that the manufacturing company shall remain a subsidiary of the Indian *Subsidiary / *JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Manufacturing Subsidiary Company are as follows :

S.No.	Item Description	
1.00.00	Date of Incorporation of Indian Manufacturing Subsidiary Company	
1.01.00	Equity participation of the Indian *Subsidiary / *JV company in the Indian Manufacturing Subsidiary Company (in percentage of the total equity)	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian manufacturing subsidiary company or upto the end of defect liability period of the contract whichever is later ?	*Yes/*No

2.3.0 is to be filled in only in pursuance of Note 8 for clause.no. 1.0.0 of Item 4 of BDS.

S.No.	Item Description

(Bidder to furnish a letter of undertaking as per format at Attachment-3A11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to note 8 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Indian *Subsidiary / *JV Company

2.00.00 Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment

2.01.00 Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of Indian manufacturing subsidiary company is enclosed at Annexure_____ of this Attachment

2.4.0** We confirm that M/s....., **a super critical steam turbine manufacturer** meets the requirements of clause 1.1.1(B) **except for generator**. Hence, as per clause 1.4.3 of item no. 4.0 of BDS, the Subsidiary Company / JV Company (as the case may be) have associated with and have a Technology Transfer agreement with M/s....., (Qualified Generator Manufacturer) meeting the requirements of clause 1.1.4 / 1.3.3 / 1.4.3 of item no. 4.0 of BDS fully in respect of generator. The details are as follows :-

The Qualified Generator Manufacturer have minimum 10% equity participation and shall continue to maintain a minimum equity participation of 10% in the Indian Subsidiary / JV Company (as the case may be), for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary / JV Company (as the case may be) or up to the end of defect liability period of the contract whichever is later.

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.00.00	Name of the reference station and its location			
1.1.0	Name, address, email, Fax No. and Tel. No. of Owner of Plant			
1.1.1	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by Qualified Generator Manufacturer from intermediary organisation			
1.2.0	Name and Designation of the responsible person in Owner's organisation			
1.2.1	Name and Designation of the responsible person in intermediary organisation			
1.03.00	No. of Generator Sets supplied			
1.04.00	Contract No. and Date			
1.05.00	Capacity in MW of Unit			
1.06.00	Starting date of project			
1.07.00	Scheduled date of commissioning			
1.08.00	Actual date of commissioning			
1.09.00	Date of commencement of successful operation			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.10.00	Scope of work for the aforesaid Generator Set includes the following:			
(a)	Designed	*Yes/*No	*Yes/*No	*Yes/*No
(b)	Engineered	*Yes/*No	*Yes/*No	*Yes/*No
(c)	*Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No	*Yes/*No
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No	*Yes/*No
(e)	*Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No	*Yes/*No

** Necessary Documents certificate from the client, in support of Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS are Attached at Annexure..... of this Attachment.

1.2.0 Details of Generator

1.2.1 Generator make and
model No.

1.2.2 Rated MVA

1.2.3 Rated Power Factor

1.2.4 MW rating

1.2.5 Rated voltage (kV)

1.2.6 No. of phases

1.2.7 No. of poles

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.02.08	Mounting	* Horizontal / *Vertical	* Horizontal / *Vertical	* Horizontal / *Vertical
1.02.09	Installation	* Indoor / *Outdoor	* Indoor / *Outdoor	* Indoor / *Outdoor
1.02.10	Cylindrical rotor Type	* Yes/*No	* Yes/*No	* Yes/*No
1.02.11	Cooling medium			
	(a) Stator			
	(b) Rotor			
1.2.12	Thermal class of Insulation			
	(a) Stator			
	(b) Rotor			
1.2.13	Date of Commissioning			
1.2.14	Date of Commencement of successful operation			
2.00.00	Certificate(s) from the Owner that the aforesaid Generator Set is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial Bid Opening is furnished at Annexure..... to this Attachment			
3.00.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			

2.5.0 *We confirm that our Associate (QSTGM) is seeking qualification as holding company (singularly or collectively) with their subsidiaries (held directly or indirectly) as per Note No. 4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.5.1	Associate (QSTGM) and their Subsidiary's(ies') Experience details in respect of meeting requirement for QSTGM (as per clause 1.1.1(B)) , item 4 of BDS	(To be filled at page to of this Attachment)		
2.5.2	Details of Subsidiary Company/Joint Venture Company registered by the Associate (QSTGM) in India meeting requirement of Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS	(To be filled at page to of this Attachment)		
2.5.3	a) *Name, Address, email, Fax, Tel. No. of the Subsidiary meeting the QR for supercritical Steam Turbine Manufacturer as per clause 1.1.0 of BDS			
	b) *Name, Address, email, Fax, Tel. No. of the Subsidiary meeting the QR for Generator Manufacturer as per clause 1.1.0 of BDS			
2.5.4	a) *Name, address, Telephone No., Fax and email of subsidiary company owning the technology for supercritical steam turbine			
	b) *Name, address, Telephone No., Fax and e-mail of subsidiary company owning the technology for generator			

*We have submitted the experience details in support of Qualifying Requirement at 2.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 2.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (**Qualified Steam Turbine Generator Manufacturer**) and above subsidiaries.

2.6.0* We confirm that our Associate i.e. M/s have manufactured / supplied in India Eight (8) Nos. supercritical Steam Turbine Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Turbine Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Turbine Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 (a) of Item no. 4 of BDS. Further, we confirm that we shall offer only the type of steam Turbine generator for which our associate is qualified.

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

1.00.00 Name and location of the reference
Station in which the unit is located

1.1.0 Name, address, email, Tel. no.
and Fax of owner of the station

1.1.1 Name and Designation of the
responsible person in owner's
organisation

1.1.2 Capacity of Steam Turbine
Generator Unit in MW

1.1.3 Contract No. & Date

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.1.4	Starting date of project	
1.1.5	Scheduled date of Commissioning	
1.1.6	Actual date of Commissioning	
1.1.7	Date of commencement of successful operation	
1.1.8	Date of commencement of Commercial operation (COD)	
1.1.9	Whether the Steam Turbine Generator is supercritical	Yes*/No*
1.1.10	Scope of work executed by *us / or *associate:	
	a) Manufactured	Yes*/No*
	b) Supplied	Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No*
1.2.0	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set has successfully completed Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.3	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	
2.00.00 Details of Turbine		
2.01.00	Steam Turbine make	
2.02.00	Tandem compound	Yes*/No*
2.03.00	No. of Reheat	
2.4.0	(i) No. of Cylinders:	
	(a) HP	
	(b) IP	
	(c) Combined HP-IP	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	(d) LP	
	(ii) Whether HP and IP cylinders are combined or separate	
2.5.0	Module Number	
	(a) HP Turbine	
	(b) IP Turbine	
	(c) Combined HP-IP turbine (if applicable)	
	(d) LP Turbine	
2.06.00	Main steam pressure (gauge)	
2.07.00	Main steam temperature (deg.C)	
2.08.00	Reheat Steam temperature (deg.C)	
2.09.00	Condensing type	Yes*/No*
2.10.00	Rated speed (RPM) and operating frequency range (Hz)	
2.11.00	No. of Steam Extractions	
2.12.00	Steam Turbine and Generator Directly coupled	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.13.00	Steam Turbine Generator Set Installation (Indoor / Outdoor)	
3.00.00	Generator Details	
3.01.00	Generator make and model No.	
3.02.00	Rated MVA	
3.03.00	Rated Power Factor	
3.04.00	MW rating	
3.05.00	Rated voltage (kV)	
3.06.00	No. of phases	
3.07.00	No. of poles	
3.08.00	Mounting (Horizontal / Vertical)	
3.09.00	Installation (Indoor / Outdoor)	
3.10.00	Cylindrical rotor type	Yes*/No*
3.11.0	Cooling medium	
	(a) Stator	
	(b) Rotor	
3.12.0	Thermal Class of insulation	
	(a) Stator	
	(b) Rotor	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

3.13.00 Schedule date of Commissioning

3.14.00 Actual date of commissioning

3.15.00 Date of commencement
of successful operation

4.00.00 Documentary evidence in support
of QR data is enclosed at
Annexure..... to this Attachment

#2.7.0 Undertaking w.r.t Deed(s) of Joint Undertaking (DJU) executed by us, our QSTGM, our Associate/ our Associate's QSTGM / Indian Subsidiary / JV Company (as the case may be), Other Promoter having 25% or higher Equity Participation in the Indian Subsidiary Company/JV Company (as the case may be), *Qualified Generator Manufacturer, *subsidiaries of Holding Company, *the Indian Manufacturing Subsidiary Company and "Indian Subsidiary Company / JV Company / Indian Manufacturing Company (as per 1.6.1 of item 4 of BDS)" as per clause 1.4.2 and/or 1.4.3 and/or applicable Notes for clause no. 1.0.0 of Item No. 4 of BDS, is enclosed at Annexure____to this Attachment.

#2.8.0 Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of clause 1.6.1 and/or Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.

Bidder to strike out whichever is not applicable.

* Bidder to strike out whichever is not applicable

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common seal).....

Note:

1. For the Indian Subsidiary (ies) /JV Company (ies), wherever the lock in period for maintaining equity in compliance to Clause 1.3.1(a) / 1.3.3 / 1.4.1(a) / 1.4.3 / 1.5.1(a) / 1.5.3 (as per item 4 of BDS) are mentioned, the following clause is also applicable:

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

In case the Indian Subsidiary (ies) /JV Company (ies) (formed for manufacturing Super Critical Steam Generator and/or supercritical Steam Turbine Generator sets) meets the criteria specified under Note No. 13 of "Notes for clause 1.0.0" (as per item 4 of BDS) and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 (as per item 4 of BDS), then the bidder would have the option of submitting "Letter of Undertaking" for support from the QSGM and/or QSTGM and/or QGM, as applicable, along with the techno-commercial bid as per the format enclosed at Attachment 3A11(A) in the bidding documents instead of the undertakings / documents for maintaining the minimum equity for the lock-in period mentioned / maintaining the subsidiary status, wherever indicated, in respect of QSGM and/or QSTGM and/or QGM, as applicable.

2. Route 1.2.0 has not been used for the purpose of qualification in Qualifying Requirements. Wherever Clause 1.2.0, 1.2.1, 1.2.2 & 1.2.3 (as per item 4 of BDS) have been referred to either directly or indirectly in any qualification routes / financial criteria, the same should be deemed to have been omitted and qualifying requirements should be read accordingly.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(Experience details for an Indian Company holding at least 51% equity in a Joint Venture Company for manufacturing Super Critical Steam Generator sets and / or Super Critical Steam Turbine Generator sets in India between an Indian Company and a Qualified Steam Generator Manufacturer and / or Qualified Steam Turbine Generator Manufacturer as per clause 1.5.0 of Item No. 4.0 of BDS)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

1.0.0 *We, M/s..... (Bidder), are an Indian Company holding majority (i.e. at least 51%) stake in M/s....., an Indian Joint Venture (JV) Company for manufacturing supercritical steam generator sets between an Indian company and a Qualified Steam Generator Manufacturer, and we are seeking Qualification as per clause 1.5.0 of Item No. 4.0 of BDS as per following details.

*We, M/s..... (Bidder), are an Indian Company and hold, through our wholly owned subsidiary M/s....., majority (i.e. at least 51%) stake in M/s....., an Indian Joint Venture (JV) Company for manufacturing supercritical steam generator sets between an Indian company and a Qualified Steam Generator Manufacturer, and are seeking Qualification as per clause 1.5.0 together with Note 7 for clause no. 1.5.0 of Item No. 4.0 of BDS as per following details.

*We, M/s..... (an Indian Company holding, *through our wholly owned subsidiary M/s....., at least 51% equity in a JV company for manufacturing supercritical steam turbine generator sets between an Indian company and a Qualified Steam Turbine Generator Manufacturer, as Bidder), are associating with M/s.....(*Qualified Steam Generator Manufacturer / *Indian Subsidiary of a Qualified Steam Generator Manufacturer / *Indian JV Company of a Qualified Steam Generator Manufacturer) and shall source the Steam Generator Set from M/s..... (Associate) as per clause 1.5.1(b) item no. 4 of BDS.

*Further, our Associate (QSGM) has registered a *Subsidiary / *JV Company M/s.....in India under the Companies Act of India.

1.1.0(a)*M/s....., the Indian Joint Venture (JV) Company has been incorporated in India under the Companies Act of India for the purpose of manufacturing supercritical steam generator sets in India covering the type, size and rating specified.

The above Joint Venture (JV) Company is promoted by (i) M/s....., a Company registered in India under the Companies Act of India and (ii) M/s

....., a Qualified Steam Generator Manufacturer (QSGM) meeting the requirement of clause 1.1.1(A), item no. 4 of BDS.

The above said JV Company have obtained certificate for commencement of Business in India as on the date of techno-commercial bid opening, (Applicable in case the JV Company is incorporated as a public limited Company).

We confirm that the QSGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of the JV Company or up to the end of the defect liability period of the contract whichever is later.

*Further, we, the majority stakeholder have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the said JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

* Further, our wholly owned subsidiary M/s....., the majority stakeholder, have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the said JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later. We shall maintain our 100% equity in the said subsidiary for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

*We, on behalf of our Associate (*QSGM / *JV Company of QSGM) confirm that M/s....., the majority stakeholder in the said JV Company, is an entity other than QSGM, are an Indian Company.

The details of the Joint Venture (JV) company are as follows :

(in fulfillment of requirement as per clause 1.5.1(a) / 1.1.2(b) / 1.4.1(a) of Item no. 4 of BDS)

S.No.	Item Description
1.00.00	Date of Incorporation of JV Company
1.01.00	Equity participation of QSGM in the JV company (In percentage of the total equity)

S.No.	Item Description	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian JV company or upto the end of defect liability period of the contract whichever is later? (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.5.1(a)/1.4.1(a)/1.1.2(b) of Item No. 4.0 of BDS supported by Board Resolution of the QSGM) (Alternatively, in case the Indian JV Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, Bidder has the option of submitting a Letter of Undertaking" for support from the QSGM as per format enclosed at Attachment 3A11.a instead of undertaking/documents/Board Resolution regarding maintaining the minimum equity for lock-in period, in line with Note 9 to clause 1.0.0 of item 4 of BDS)	*Yes/*No
2.00.00	Equity participation of the Majority Stake Holder having Equity equal to or more than 51% in JV Company	
2.01.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian JV company or upto the end of defect liability period of the contract whichever is later?	*Yes/*No

S.No.	Item Description
	(Majority Stake Holder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for their equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.5.1(a)/1.4.1(a)/1.1.2(b) of Item No. 4.0 of BDS supported by Board Resolution of the Majority Stake Holder)
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment

S.No.	Item Description
3.01.00	Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of JV company is enclosed at Annexure _____ of this Attachment

1.1.0(a)(i) *We (Bidder) confirm that we are the majority stakeholder in the said JV company

*We (Bidder) confirm that we, through our wholly owned subsidiary M/s....., are the majority stakeholder in the said JV company

*We, on behalf of our Associate, confirm that M/s, the majority stakeholder in the said JV company, is an Indian company and an entity other than the Qualified Steam Generator Manufacturer (QSGM).

We further confirm that the majority stake holder in the JV Company, have executed in the last 10 years, large industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of techno-commercial bid opening. The details are as follows :

S.No.	Item Description	Project #1	Project #2	Project #3
1.0	Name of the reference station & its Location			
1.1	Owner's Name, email and its address, Fax No. and Tel. No.			
1.2	Name and Designatin of the responsible person in Owner's organisation			

1.1.0(a)(i) is applicable in case the Bidder is the majority stake holder in the JV Company either on its own or through its wholly owned subsidiary, or the Bidder's Associate is a JV Company.

S.No.	Item Description	Project #1	Project #2	Project #3	
	Contract No. & date				1.03
1.4	(i) Nature/area of EPC Project				
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No	
1.5	Starting date of Project				
1.6	Scheduled date of Commissioning				
1.7	Actual date of Commissioning				
1.8	Date of Commencement of successful Operation				
1.9	Value of above projects (in INR Million)				
1.10	Scope of work executed				
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No	
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No	
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No	
1.11	Certificate from the Owner(s) that the aforesaid plants are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening				
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment				
1.13	Date of Incorporation of JV Company				
1.14	Equity participation of majority Stake Holder Company in the Indian JV company (in percentage of the total equity)				

*Yes/ *No

1.1.0**(a)(ii) We, on behalf of our Associate, confirm that the said Indian JV Company's Parent Company M/s have executed, in the last 10 years, large industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petrochemical, fertilizer and / or any other process industry with the total value of such projects being INR 10000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening.

*1.1.0**(a)(ii) is to be filled in only in pursuance of Note No. 6 for cl. no. 1.0.0 of Item no. 4 of BDS.*

The qualification details of Parent Company of Indian JV Company are as follows :

S.No.	Item Description	Project #1	Project #2	Project #3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and Designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No

S.No.	Item Description	Project #1	Project #2	Project #3
	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			1.11
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			
1.13	Date of Incorporation of JV Company			
1.14	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			
1.15	Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later?		*Yes/ *No	
	(Bidder to furnish a letter of undertaking as per formant enclosed at Attachment-3A11 for equity participation of parent company in the wholly owned subsidiary company along with lock in period of such equity in compliance to note 6 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)			

1.1.0 *(b) We confirm that our wholly owned subsidiary M/s....., the majority stakeholder, have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the said JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later. We shall maintain our 100% equity in the said subsidiary for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

1.1.0(b) is to be filled in only in pursuance of Note No. 7 for clause 1.0.0 of Item No. 4 of BDS.*

The details of the wholly owned Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of the Subsidiary Company
1.01.00	Our equity participation in the subsidiary company (in percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for their equity participation in the Subsidiary Company along with lock in period of such equity in compliance to Note 7 for clause 1.0.0 of item 4 of BDS supported by their Board Resolution)

S.No.	Item Description
2.00.00	Equity participation of the subsidiary company having equity equal to or more than 51% in the JV company for manufacturing supercritical steam generator sets in India between an Indian company and a QSGM
2.01.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish, on behalf of its subsidiary, a letter of undertaking as per format enclosed at Attachment-3A11 for the subsidiary's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.5.1(a) together with Note 7 for clause 1.0.0 of item 4 of BDS supported by Board Resolution of the subsidiary)
3.00.00	Copy of Certificate of Incorporation and Memorandum of Association of Bidder's subsidiary company is enclosed at Annexure_____of this Attachment

- 1.1.0 *(c) We confirm that *our Associate is an Indian Subsidiary Company of M/s..... (QSGM) registered in India / *our Associate (QSGM) have registered an Indian Subsidiary Company M/s.....in India, as per Companies Act of India, for manufacturing supercritical Steam Generator sets covering the type, size and rating specified. Further, the Indian Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... is a subsidiary company of M/s..... (QSGM) and shall remain a subsidiary company of the QSGM for a minimum period of 7 years from the date of incorporation of the Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

- 1.00.00 Date of Incorporation of Indian Subsidiary Company
- 1.01.00 Equity participation of QSGM in the Indian subsidiary company (In percentage of the total equity)
- 1.02.00 Lock in period for above equity participation from the date of incorporation

(Bidder to furnish a letter of undertaking as per format enclosed at Attachment-3A11 for QSGM's equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSGM)

(Alternatively, in case the Indian Subsidiary Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, Bidder has the option of submitting a "Letter of Undertaking" for support from the QSGM as per format enclosed at Attachment 3A11.a instead of undertaking/documents/ Board Resolution regarding maintaining the Subsidiary Status, in line with Note 9 to clause 1.0.0 of item 4 of BDS)

- 2.00.00 *Equity participation of other Promoter having Equity equal to

or more than 25% in the Indian
Subsidiary Company

2.01.00 *Lock in period for above equity
participation from the date of
incorporation.

- 3.00.00 Certificate for commencement of Business in India (if applicable) is enclosed at Annexure _____ of this Attachment
- 3.01.00 Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure _____ of this Attachment

1.2.0 M/s.....(Qualified Steam Generator Manufacturer) have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of at least one (1) number of pulverised coal fired supercritical Steam Generator having rated capacity of 1500 tones of steam per hour or above. Further, such Steam generator is of the type specified, i.e. single pass (tower type) or two pass type using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing, and are in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

*Further, we confirm that reference Steam Generator is provided with evaporator suitable for variable pressure operation (sub-critical and super-critical pressure ranges). Also, we confirm that offered steam generator is of the same type, having same type of water wall tubing for which reference of Steam Generator has been furnished below The details are as follows :-

Sl.	Item Description	Station-1	Station-2	Station-3	No.
1.00.00	Name, address, email, Tel. no. and Fax of QSGM				
1.1.0	Name and Designation of the responsible person in QSGM				

Sl.	Item Description	Station-1	Station-2	Station-3	No.
1.1.1	Name of the reference station and its location				
1.1.2	Name, address, email, Fax No. and Tel. No. of Owner of station				
1.1.3	Name and Designation of the responsible person in Owner's organisation				
1.2.0	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by Qualified Steam Generator Manufacturer from intermediary organisation				
1.2.1	Name and Designation of the responsible person in intermediary organisation				
1.03.00	No. of units & capacity of each unit in MW				
1.04.00	No. of steam generator sets supplied by QSGM for the reference station				
1.05.00	Contract No. & Date				
1.06.00	Starting date of Project				
1.07.00	Scheduled date of Commissioning				
1.08.00	Actual date of Commissioning				
1.09.00	Date of commencement of successful operation				

Sl.	Item Description	Station-1	Station-2	Station-3	No.
1.10.00	Whether the Plant is pulverised coal fired	Yes*/No*	Yes*/No*	Yes*/No*	
1.11.00	Scope of work executed by us for the aforesaid Steam Generator includes the following :				
a)	Designed	Yes*/No*	Yes*/No*	Yes*/No*	
b)	Engineered	Yes*/No*	Yes*/No*	Yes*/No*	
c)	*Manufactured/*Got manufactured	Yes*/No*	Yes*/No*	Yes*/No*	
d)	*Erection/*Supervised erection/**Acted as Advisor for erection	Yes*/No*	Yes*/No*	Yes*/No*	
e)	*Commissioned/*Supervised commissioning/**Acted as advisor for commissioning	Yes*/No*	Yes*/No*	Yes*/No*	
f)	Whether the plant is in successful operation for a period of one (1) year (minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*	

(**In case the bidder has acted as advisor for erection / commissioning of reference Steam Generator, bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment pursuant to Note No. 2 for clause no. 1.0.0, Item 4 of BDS)

2.00.00 Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)

2.01.00 Main Steam Temperature at SH outlet (°C)

Sl.	Item Description	Station-1	Station-2	Station-3	No.
2.02.00	Main Steam Pressure at SH outlet [kg/cm ² (a)]				
2.03.00	Reheat steam flow (T/Hr.)				
2.04.00	a) Reheater outlet pressure [kg/cm ² (a)]				
	b) Reheater outlet temperature (°C)				
2.05.00	Whether balanced draft type or not	Yes*/No*	Yes*/No*	Yes*/No*	
2.06.00	Type of Steam Generator				
	i) Single pass (tower type) or two pass type (must match with offered type)				
	ii) Once through type	Yes*/No*	Yes*/No*	Yes*/No*	
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*	
(In case the answer to above clause (iii) is "No", in such a case, the bidder shall furnish additional data in support of requirements indicated in clause 1.5.0 to this attachment)					
2.07.00	Type of circulation system (Natural or Forced/Assisted)				
2.08.00	Type of Water wall tubes [spiral wound (inclined) or vertical plain or vertical rifled] (must match with offered type)				

Sl.	Item Description	Station-1	Station-2	Station-3	No.
2.09.00	Minimum mass flow through the water wall tubes Kg/sec./m ²				
2.10.0	Type of coal used				
	i) Max. HHV (Kcal/Kg)				
	ii) Min. HHV (Kcal/Kg)				
	iii) Max. Ash content (%)				
	iv) Max. total moisture content (%)				
	v) Volatile matter content (%)				
2.10.1	Type of oil used				
	i) HHV (Kcal/Kg)				
	ii) Sulphur content (%)				
	iii) Viscosity in centistoke at 50°C (Max.°C)				
	iv) Pour point (°C)				
	v) Flash point (°C)				
2.11.0	Fuel (other than pulverised coal fired)				
2.11.1	Type of fuel used				
2.11.2	Firing rate				
2.11.3	Calorific value of fuel (Kcal/kg)				
2.12.00	Designed Boiler efficiency and corresponding GCV				

Sl.	Item Description	Station-1	Station-2	Station-3	No.
2.13.00	Tested boiler efficiency and corresponding GCV				
2.14.00	Tested boiler efficiency corrected to design conditions and corresponding GCV				
2.15.00	a) Whether used for two shifting				
	b) If yes, number of such operations it has been designed for				
	c) No. of actual two shifting cycles it has actually operated on till date				
-					
2.16.0	Minimum start-up time achieved				
	i) Cold (after 72 hrs. of unit shut down)				
	ii) Warm (after 36 hrs. of unit shut down)				
	iii) Hot (after 8 hrs. of unit shut down)				
2.17.00	Availabilities of steam generator for last two years				
2.18.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators				

Sl.	Item Description	Station-1	Station-2	Station-3	No.
3.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure				
3.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment				
3.2.0	Documentary evidence in case the award for reference work (steam generator set) has been received by *Bidder (Qualified Steam Generator Manufacturer) from Owner of plant or *any other intermediary organization				
	(i) Certificate from *Owner of the plant or *intermediary organisation to be furnished by *Bidder/ *Bidder on behalf of Qualified Steam Generator Manufacturer, in support of the claim of meeting requirement of Note 3 of clause 1.0.0, item 4 of BDS as the case may be, enclosed at Annexure..... to this Attachment				
	(ii) Certificate from Owner of the plant to be furnished by *Bidder/ *Bidder on behalf of Qualified Steam Generator Manufacturer for the successful operation of the Steam Generator Set as specified at requirement stipulated at clause 1.1.0, item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment				

Notes :

1. Wherever the term 'coal fired' is appearing above, "coal" shall be deemed to also include bituminous Coal/Sub Bituminous Coal/Brown Coal/Lignite.

- 1.3.0*** We confirm that *our JV Company / *our Associate (an Indian *Subsidiary / *JV Company of a QSGM) / *our Associate's (QSGM's) *Indian subsidiary / *JV Company, whose details are indicated at *1.1.0(a) / *1.1.0(c) above, have registered another **Indian Manufacturing Subsidiary** Company M/s....., as per Companies Act of India for manufacturing supercritical steam generator sets in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India (Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that the manufacturing company shall remain a subsidiary of Indian *Subsidiary / *JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian Manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

1.3.0 is to be filled in only in pursuance of Note No. 8 for clause no. 1.0.0 of Item no. 4 of BDS.*

The details of Indian Manufacturing Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of Indian manufacturing Subsidiary Company
1.01.00	Equity participation of the Indian *Subsidiary / *JV Company in the Indian manufacturing subsidiary company (In percentage of the total equity)

S.No.	Item Description	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian manufacturing subsidiary company or upto the end of defect liability period of the contract whichever is later? (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to Note 8 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the *Subsidiary / *JV company)	*Yes/*No
2.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment	
2.01.00	Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of Indian manufacturing subsidiary company is enclosed at Annexure_____ of this Attachment	

1.4.0 *We confirm that our Associate (QSGM) is seeking qualification as holding company (singularly or collectively) with its subsidiaries (held directly or indirectly) as per notes No.4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

- 1.4.1 Associate (QSGM) and their subsidiary's (ies') Experience Details in respect of meeting requirement for QSGM (as per clause **1.1.1(A)**), item 4 of BDS (To be filled at page to of this Attachment)
- 1.4.2 Details of *Subsidiary Company/*Joint Venture Company registered by the Associate (QSGM) in India meeting requirement of Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS (To be filled at page to of this Attachment)
- 1.4.3 *Name, Address, email, Fax, Tel. No. of the Subsidiary meeting the QR for QSGM as per clause 1.1.0 of BDS
- 1.4.4 *Name, address, Telephone No., Fax and email of subsidiary company owning the technology for supercritical steam generators

*We have submitted the experience details in support of Qualifying Requirement at 1.2.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 1.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (QSGM) and above subsidiaries.

TO BE FILLED IN BY THE BIDDER WHO IS SEEKING QUALIFICATION AS PER CLAUSE 1.5.1(a) , ITEM 4 OF BDS READ IN CONJUNCTION WITH NOTE 5 TO CLAUSE 1.0.0, ITEM 4 OF BDS (I.E. IF THE ANSWER TO SUB-CLAUSE 2.06.00(iii) TO CLAUSE 1.2.0 ABOVE IS "NO")

1.5.0 *We confirm that M/s _____(Supercritical Steam Generator Manufacturer) meets all the requirement as per 1.1.1(A) of BDS **except that the evaporator indicated** in the reference steam generator is not designed for variable pressure operation and is designed for constant pressure (Universal Pressure) operation only and seeking qualification along with the original technology owner (Licensor) with whom he has an ongoing license agreement (which covers technology transfer), as on the date of Techno-Commercial bid opening, for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator

technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges).

Further, we confirm that original technology owner (Licensor) has experience of providing variable pressure design steam generator technology for at least one (1) no. of pulverised coal fired supercritical steam generator for a 1500 T/hr or higher capacity using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing with the evaporator suitable for variable pressure operation in sub-critical and super-critical pressure ranges and which is be in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening. The detail of Licensor and his experience detail are as follows:-

I. Details of Technology Owner (Licensor)

1.01.00 Name of the original technology Owner (Licensor)

1.02.00 Address, Email ID & Tel No.

1.03.00 Name and Designation of the Responsible person in the Organization

1.04.00 Licensing agreement for max. Capacity rating of Steam Generator (in MW)

1.05.00 Date of Start of Licensing agreement

1.06.00 Date of End of Licensing agreement

1.07.00	Whether Scope of licensing agreement covers for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges)	*Yes/*No

1.08.00 Copy of relevant portion of Licensing agreement attached at Annexure.....

**II. Details of experience of
Technology owner (Licensor)**

Sl.	Item Description	Station-1	Station-2	Station-3	No.
1.01.00	Name of the reference station and its location				
1.02.00	Client name and its address, Fax No. & Tel.No., email ID				
1.03.00	(i) Actual date of completion				
	(ii) Date of commencement of Successful operation				
1.04.00	Whether the Plant in Successful operation	Yes*/No*	Yes*/No*	Yes*/No*	
-1.05.00	Scope of work executed for the aforesaid Steam Generator includes the following :				
	i) Designed	Yes*/No*	Yes*/No*	Yes*/No*	
	ii) Engineered	Yes*/No*	Yes*/No*	Yes*/No*	
	iii) Whether the plant is in successful operation for a period of one (1) year (Minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*	

Sl.	Item Description	Station-1	Station-2	Station-3	No.
1.06.00	i) Supercritical Steam Generator	Yes*/No*	Yes*/No*	Yes*/No*	
	ii) Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)				
1.07.00	Type of Steam Generator				
	i) Single pass (tower type) or two pass type (must match with offered type)				
	i) Once through type	Yes*/No*	Yes*/No*	Yes*/No*	
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*	
1.08.00	Type of Water wall tubes (Spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)				
1.09.00	Type of firing (Coal)	Yes*/No*	Yes*/No*	Yes*/No*	
1.10.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial bid opening and caused no serious problem in past, is furnished alongwith bid at Annexure				
1.11.00	Deed of Joint Undertakings as per Performa enclosed in Section-VII (Forms & Procedures) is furnished alongwith the bid at Annexure				

1.6.0* We confirm that our Associate i.e. M/s have manufactured / supplied in India Eight (8) Nos. supercritical Steam Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 of Item no. 4 of BDS. Further, we confirm that we shall offer only the type of steam generator for which our associate is qualified.

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

1.00.00 Name and location of the reference
Station in which the unit is located

1.1.0 Name, address, email, Tel. no.
and Fax of owner of the station

1.1.1 Name and Designation of the
responsible person in owner's
organisation

1.1.2 Capacity of Steam Generator
Unit in MW

1.1.3 Contract No. & Date

1.1.4 Starting date of project

1.1.5 Scheduled date of Commissioning

1.1.6 Actual date of Commissioning

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.1.7	Date of commencement of successful operation	
1.1.8	Date of commencement of Commercial operation (COD)	
1.1.9	Whether the Steam Generator is supercritical	Yes*/No*
1.1.10	Scope of work executed by associate:	
	a) Manufactured	Yes*/No*
	b) Supplied	Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No*
1.2.0	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set has successfully completed Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Details of Steam Generator

2.00.00 Name and Address of Steam Generator Set manufacturer

2.01.00 Steam Generator steam flow capacity at SH outlet (T/Hr.)

2.02.00 Main Steam Temperature at SH outlet (°C)

2.03.00 Main Steam Pressure at SH outlet [kg/cm²/(a)]

2.04.00 Reheat steam flow (T/Hr.)

2.05.00 a) Reheater outlet pressure [kg/cm² (a)]

b) Reheater outlet temperature (°C)

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.06.00	Whether balanced draft type or not	
2.7.0	Type of Steam Generator	
	i) Single pass (tower type) or two pass type (must match with offered type)	
	ii) Once through type	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*
2.08.00	Type of circulation system (Natural or Forced Circulation)	
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)	
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m ²)	
2.11.0	Type of coal used	
	i) Max. HHV (Kcal/Kg)	
	ii) Min. HHV (Kcal/Kg)	
	iii) Max. Ash content (%)	
	iv) Max. total moisture content (%)	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	v) Volatile matter content (%)	
2.11.1	Type of oil used	
	i) HHV (Kcal/Kg)	
	ii) Sulphur content (%)	
	iii) Viscosity in centistoke at 50°C (Max.°C)	
	iv) Pour point (°C)	
	v) Flash point (°C)	
2.12.0	Fuel (other than pulverised coal fired)	
2.12.1	Type of fuel used	
2.12.2	Firing rate	
2.12.3	Calorific value of fuel (Kcal/kg)	
2.13.00	Designed Boiler efficiency and corresponding GCV	
2.14.00	Tested boiler efficiency and corresponding GCV	
2.15.00	Tested boiler efficiency corrected to design conditions and corresponding GCV	
2.16.00	a) Whether used for two shifting	
	b) If yes, number of such operations it has been designed for	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	c) No. of actual two shifting cycles it has actually operated on till date	
2.17.0	Minimum start-up time achieved	
	i) Cold (after 72 hrs. of unit shut down)	
	ii) Warm (after 36 hrs. of unit shut down)	
	iii) Hot (after 8 hrs. of unit shut down)	
2.18.00	Availabilities of steam generator for last two years	
2.19.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators	
3.00.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	
#1.7.0	Undertaking w.r.t Deed of Joint Undertaking (DJU) executed by us, our wholly owned subsidiary, the QSGM, the JV Company, our Associate / our Associate's QSGM / Indian *Subsidiary / *JV Company (as the case may be), other Promoter having 25% or higher equity participation in the Indian Subsidiary Company / JV Company (as the case may be), *subsidiaries of Holding Company, *Technology Owner (Licensor) of supercritical steam generator, *Indian manufacturing subsidiary company and *Indian Subsidiary Company / JV Company / Indian Manufacturing Company (as per 1.6.1 of item 4 of BDS)" as per clause 1.5.2 and/or applicable Notes for clause no. 1.0.0 of Item No. 4.0 of BDS is enclosed at Annexure _____ to this Attachment.	
#1.8.0	Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of clause 1.6.1 and/or Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.	

Bidder to strike out whichever is not applicable.

* Bidder to strike out whichever is not applicable

Date :

(Signature).....

Place:

(Printed Name).....
(Designation).....
(Common Seal).....

2.0.0 *We, M/s.....(Bidder), are an Indian Company holding majority (i.e. at least 51%) stake in M/s....., an Indian Joint Venture (JV) Company for manufacturing supercritical steam turbine generator sets between an Indian company and a Qualified Steam Turbine Generator Manufacturer, and we are seeking Qualification as per clause 1.5.0 of Item No. 4.0 of BDS as per following details.

*We, M/s..... (Bidder), are an Indian Company and hold, through our wholly owned subsidiary M/s....., majority (i.e. at least 51%) stake in M/s....., an Indian Joint Venture (JV) Company for manufacturing supercritical steam turbine generator sets between an Indian company and a Qualified Steam Turbine Generator Manufacturer, and are seeking Qualification as per clause 1.5.0 together with Note 7 for clause no. 1.5.0 of Item No. 4.0 of BDS as per following details.

*We, M/s(an Indian Company holding, *through our wholly owned subsidiary M/s....., at least 51% equity in a JV company for manufacturing supercritical Steam Generator sets between an Indian company and a Qualified Steam Generator Manufacturer, as Bidder), are associating with M/s (*Qualified Steam Turbine Generator Manufacturer / *Indian Subsidiary of a Qualified Steam Turbine Generator Manufacturer / *Indian JV Company of a Qualified Steam Turbine Generator Manufacturer) and shall source the Steam Turbine Generator Set from M/s (Associate) as per clause 1.5.1(b) item no. 4 of BDS.

*Further, our Associate (QSTGM) have registered a *Subsidiary / *JV Company M/s.....in India under the Companies Act of India.

*We, M/s..... (Bidder), through our wholly owned subsidiary M/s....., are seeking Qualification as per clause 1.5.0 together with Note 7 for clause 1.5.0 of Item No. 4.0 of BDS as per following details.

2.1.0(a) *M/s....., the Indian Joint Venture (JV) Company has been incorporated in India under the Companies Act of India for the purpose of manufacturing supercritical steam turbine generator sets in India covering the type, size and rating specified.

The above Joint Venture (JV) Company is promoted by (i) M/s....., a Company registered in India under the Companies Act of India and (ii) M/s , a Qualified Steam Turbine Generator Manufacturer (QSTGM) meeting the requirement of clause 1.1.1(B), item no. 4 of BDS.

The above said JV Company have obtained certificate for commencement of Business in India as on the date of techno-commercial bid opening, (Applicable in case the JV Company is incorporated as a public limited Company).

We confirm that the QSTGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of the JV Company or up to the end of the defect liability period of the contract whichever is later.

*Further, we, the majority stakeholder have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the said JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

*Further, our wholly owned subsidiary M/s....., the majority stakeholder, have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the said JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later. We shall maintain our 100% equity in the said subsidiary for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

*We, on behalf of our Associate (*QSTGM / *JV Company of a QSTGM), confirm that M/s....., the majority stakeholder in the said JV Company, is an entity other than QSTGM, are an Indian Company.

The details of the Joint Venture (JV) company are as follows :

(in fulfillment of requirement as per clause 1.5.1(a) / 1.1.2(b) / 1.4.1(a) of Item no. 4 of BDS)

S.No.	Item Description	
1.00.00	Date of Incorporation of JV Company	
1.01.00	Equity participation of QSTGM in the JV company (In percentage of the total equity)	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian JV company or upto the end of defect liability period of the contract whichever is later?	*Yes/*No
	(Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSTGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.5.1(a)/ 1.4.1(a)/1.1.2(b) of Item No. 4.0 of BDS supported by Board Resolution of the QSTGM)	
	(Alternatively, in case the Indian JV Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause	

3.0.0 of item 4 of BDS, Bidder has the option of submitting a "Letter of Undertaking" for support from the QSTGM as per format enclosed at Attachment 3A11.a instead of undertaking/documents/ Board Resolution regarding maintaining the JV Status, in line with Note 9 to clause 1.0.0 of item 4 of BDS)

S.No.	Item Description	
2.00.00	Equity participation of the Majority Stake Holder having Equity equal to or more than 51% in JV Company	
2.01.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian JV company or upto the end of defect liability period of the contract whichever is later? (Majority Stake Holder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for their equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.5.1(a)/1.4.1(a)/1.1.2(b) of Item No. 4.0 of BDS supported by Board Resolution of the Majority Stake Holder)	*Yes/*No
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment	
3.01.00	Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of JV company is enclosed at Annexure_____ of this Attachment	

2.1.0(a)(i)**We (Bidder) confirm that we are the majority stakeholder in the said JV company.

*We, on behalf of our Associate, confirm that M/s, the majority stakeholder in the said JV company, is an Indian company and an entity other than the Qualified Steam Turbine Generator Manufacturer (QSTGM).

We further confirm that the majority stake holder in the JV Company, have executed in the last 10 years, large industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of techno-commercial bid opening. The details are as follows:

S.No.	Item Description	Project#1	Project#2	Project#3	
	Name of the reference station & its Location				1.00
1.1	Owner's Name, email and its address, Fax No. and Tel. No.				
1.2	Name and designation of the responsible person in Owner's organisation				

2.1.0(a)(i) is applicable in case the Bidder is the majority stake holder in the JV company either on its own or through its wholly owned subsidiary, or the Bidder's Associate is a JV Company.

S.No.	Item Description	Project#1	Project#2	Project#3
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			

S.No.	Item Description	Project#1	Project#2	Project#3
1.9	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno- Commercial Bid opening			
1.12	Necessary documentary evidence is support of above are attached at Annexure..... of this Attachment Note 7 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)			
1.13	Date of Incorporation of JV Company			
1.14	Equity participation of majority Stake Holder Company in the Indian JV company (in percentage of the total equity)			
1.15	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian JV company or upto the end of defect liability period of the contract whichever is later? (Bidder to furnish a letter of undertaking as per formant enclosed at Attachment-3A11		*Yes/ *No	

for equity participation of
of majority Stake Holder Company in
the Indian JV company along with
lock in period of such equity in compliance
to Note 7 for clause 1.0.0 of
Item No. 4.0 of BDS supported
by Board Resolution of majority Stake
Holder Company)

2.1.0**(a)(ii) We, on behalf of our Associate, confirm that the said Indian JV Company's Parent Company M/s have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening.

We, on behalf of our Associate, confirm that the Indian JV Company is a wholly owned subsidiary of their parent company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the said Indian JV Company (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

2.1.0**(a)(ii) is to be filled in only in pursuance of Note No. 6 for cl. no. 1.0.0 of Item no. 4 of BDS.

The qualification details of Parent Company of Indian JV Company are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			

S.No.	Item Description	Project#1	Project#2	Project#3
1.07	Actual date of Commissioning			
1.08	Date of Commencement of successful Operation			
1.09	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year as on date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			
1.13	Date of Incorporation of JV Company			
1.14	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			
1.15	Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later? (Bidder to furnish a letter of undertaking as per format		*Yes / *No	

enclosed at Attachment 3A11
for equity participation of
parent company in the
wholly owned subsidiary company
along with lock in period of
such equity in compliance to
note 6 for clause 1.0.0 of Item
No. 4.0 of BDS supported by
Board Resolution of
the Parent Company)

2.1.0 *(b) We confirm that our wholly owned subsidiary M/s....., the majority stakeholder, have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the said JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later. We shall maintain our 100% equity in the said subsidiary for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

2.1.0(b) is to be filled in only in pursuance of Note No. 7 for clause 1.0.0 of Item No. 4 of BDS.*

The details of the wholly owned Subsidiary Company are as follows :

- 1.00.00 Date of Incorporation of
the Subsidiary Company
- 1.01.00 Our equity participation in
the subsidiary company
(in percentage of the total equity)
- 1.02.00 Lock in period for above
equity participation from the
date of incorporation

(Bidder to furnish a letter of
undertaking as per format
enclosed at Attachment 3A11
for their equity participation
in the Subsidiary Company
along with lock in period of
such equity in compliance to
Note 7 for clause 1.0.0 of
item 4 of BDS supported by
their Board Resolution)

- 2.00.00 Equity participation of the subsidiary company having equity equal to or more than 51% in the JV company for manufacturing supercritical steam turbine generator sets in India between an Indian company and a QSTGM
- 2.01.00 Lock in period for above equity participation from the date of incorporation
- (Bidder to furnish, on behalf of its subsidiary, a letter of undertaking as per format enclosed at Attachment 3A11 for the subsidiary's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.5.1(a) together with Note 7 for clause 1.0.0 of item 4 of BDS supported by Board Resolution of the subsidiary)
- 3.00.00 Copy of Certificate of Incorporation and Memorandum of Association of Bidder's subsidiary company is enclosed at Annexure_____of this Attachment
-

2.1.0 *(c) We confirm that *our Associate is an Indian Subsidiary Company of M/s..... (QSTGM) registered in India / *our Associate (QSTGM) have registered an Indian Subsidiary Company M/s.....in India as per Companies Act of India, for manufacturing supercritical Steam Turbine Generator sets covering the type, size and rating specified. Further, the Indian Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... is a subsidiary company of M/s..... (QSTGM) and shall remain a subsidiary company of the QSTGM for a minimum period of 7 years from the date of incorporation of the Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

- 1.00.00 Date of Incorporation of Indian Subsidiary Company
- 1.01.00 Equity participation of QSTGM in the Indian subsidiary company (In percentage of the total equity)
- 1.02.00 Lock in period for above equity participation from the date of incorporation
- (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSTGM's equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM)
- (Alternatively, in case the Indian Subsidiary Company meets the criteria specified under Note no. 13 to clause 1.0.0 of item 4 of BDS and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 of item 4 of BDS, Bidder has the option of submitting a "Letter of Undertaking" for support from the QSTGM as per format enclosed at Attachment 3A11.a instead of undertaking/documents/ Board Resolution regarding maintaining the Subsidiary Status, in line with Note 9 to clause 1.0.0 of item 4 of BDS)
- 2.00.00 *Equity participation of other Promoter having Equity equal to or more than 25% in the Indian Subsidiary Company
- 2.01.00 *Lock in period for above equity participation from the date of incorporation.
- 3.00.00 Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
- 3.01.00 Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure_____of this Attachment

- 2.2.0 We confirm that the QSTGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of (i) at least one (1) number supercritical steam turbine of tandem compound, condensing, reheat type of 500 MW or above capacity with main steam pressure of 225 Kg/cm² (gauge) or higher and main steam / reheat temperature of 565° C / 565° C or higher and (ii) at least one (1) number of generator of two pole, Thermal class 155 (F) winding insulation, hydrogen / water cooled stator and hydrogen / water cooled rotor of 500 MW or above capacity. These steam turbine and generator are in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening. The details are as follows :-

S No.	Item Description	For Steam Turbine	For Generator (if separate station)
		----- Station-1, 2, 3	----- Station-1, 2, 3
1.00.00	Name, address, email, Tel no. and Fax of QSTGM		
1.1.0	Name and Designation of the responsible person in QSTGM		
1.1.1	Name of the reference station and its location		
1.1.2	Name, address, Fax No., e-mail and Tel. No. of Owner of reference station		
1.1.3	Name, address, Fax No., e-mail and Tel. No. of intermediary organisation in case the award has been recieved by Qualified Steam Turbine Generator Manufacturer from intermediary organisation		
1.2.0	Name and Designation of the responsible person in Owner's organisation		
1.2.1	Name and Designation of the responsible person in intermediary organisation		

S No.	Item Description	For Stean Turbine	For Generator (if separate station)
		----- Station-1, 2, 3	----- Station-1, 2, 3
1.03.00	No. of Steam Turbine Generator Sets supplied by QSTGM for the station		
1.04.00	Contract No. and Date		
1.05.00	Capacity in MW of Unit		
1.06.00	Starting date of project		
1.07.00	Scheduled date of commissioning		
1.08.00	Actual date of commissioning		
1.09.00	Date of commencement of successful operation		
1.10.00	Scope of work executed by QSTGM for the aforesaid Steam Turbine Generator Set includes the following :		
	(a) Designed	*Yes/*No	*Yes/*No
	(b) Engineered	*Yes/*No	*Yes/*No
	(c) *Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No
	(d) *Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No
	(e) *Commissioned/*Super- vised Commissioning / **Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No

(**In case the QSTGM has acted as advisor for erection / commissioning of reference Steam Turbine & Generator, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS)

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.00.00 Details of Turbine				
2.01.00	Steam Turbine make			
2.02.00	Tandem compound	*Yes/*No	*Yes/*No	*Yes/*No
2.03.00	No. of Reheat			
2.4.0	(i) No. of Cylinders:			
	(a) HP			
	(b) IP			
	(c) Combined HP-IP			
	(d) LP			
	(ii) Whether HP and IP cylinders are combined or separate			
2.5.0	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP turbine (if applicable)			
	(d) LP Turbine			
2.06.00	Main steam pressure (gauge)			
2.07.00	Main steam temperature (deg.C)			
2.08.00	Reheat Steam temperature (deg.C)			
2.09.00	Condensing type	*Yes/*No	*Yes/*No	*Yes/*No

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.10.00	Rated speed (RPM) and operating frequency range (Hz)			
2.11.00	No. of Steam Extractions			
2.12.00	Steam Turbine and Generator Directly coupled	*Yes/*No	*Yes/*No	*Yes/*No
2.13.00	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.00.00	Generator Details			
3.01.00	Generator make and model No.			
3.02.00	Rated MVA			
3.03.00	Rated Power Factor			
3.04.00	MW rating			
3.05.00	Rated voltage (kV)			
3.06.00	No. of phases			
3.07.00	No. of poles			
3.08.00	Mounting	* Horizon- tally / *Vertical	* Horizon- tally / *Vertical	* Horizon- tally / *Vertical
3.09.00	Installation	* Indoor/ *Outdoor	*Indoor/ Outdoor	*Indoor/ Outdoor
3.10.00	Cylindrical rotor type	* Yes/*No	* Yes/*No	* Yes/*No

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
3.11.0	Cooling medium			
	(a) Stator			
	(b) Rotor			
3.12.0	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			
3.13.00	Schedule date of Commissioning			
3.14.00	Actual date of commissioning			
3.15.00	Date of commencement of successful operation			
4.0.0	Certificate(s) from the Owner that the aforesaid Steam Turbine Generator Set / Steam Turbine/Generator (as applicable) is in successful operation for a period of not less than one (1) year prior to date of Techno- Commercial Bid Opening, and caused no serious problem in past, is furnished at Annexure..... to this Attachment			
4.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
4.2.0	Documentary evidence in case the award for reference work (steam Turbine generator set) has been received by *Bidder (*Indian Subsidiary Company of QSTGM)/ *Associate (*QSTGM/ Indian *Subsidiary/*JV Company of QSTGM) from Owner of plant or *any other intermediary organization			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	(i) Certificate from *Owner of the plant or *intermediary organisation to be furnished by *Bidder / *Bidder on behalf of its Associate in support of the claim of meeting requirement at clause 1.1.0 item 4 of BDS as the case may be, enclosed at Annexure..... to this Attachment			
	(ii) Certificate from Owner of the plant to be furnished by *Bidder / *Bidder on behalf of its Associate for the successful operation of the Steam Turbine *Generator Set (as applicable) as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment			

2.3.0* We confirm that *our JV Company / *our Associate (an Indian *Subsidiary / *JV Company of a QSTGM) / *our Associate's (QSTGM's) *Indian subsidiary / *JV Company, whose details are indicated at *2.1.0(a) / *2.1.0(c) above have registered another **Indian Manufacturing Subsidiary** Company M/s....., as per Companies Act of India for manufacturing supercritical steam turbine generator sets in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India (Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that the manufacturing company shall remain a subsidiary of Indian *Subsidiary / *JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian Manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

2.3.0 is to be filled in only in pursuance of Note No. 8 for clause no. 1.0.0 of Item no. 4 of BDS.*

The details of Indian Manufacturing Subsidiary Company are as follows :

1.00.00	Date of Incorporation of Indian manufacturing Subsidiary Company	
1.01.00	Equity participation of the Indian *Subsidiary / *JV Company in the Indian manufacturing subsidiary company (In percentage of the total equity)	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian manufacturing subsidiary company or upto the end of defect liability period of the contract whichever is later? (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to Note 8 for clause 1.0.0 of of Item No. 4.0 of BDS supported by Board Resolution of the *Subsidiary / *JV company)	*Yes/*No
2.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment	
2.01.00	Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of Indian manufacturing subsidiary company is enclosed at Annexure_____ of this Attachment	
-

2.4.0** We confirm that M/s....., **a super critical steam turbine manufacturer** meets the requirements of clause 1.1.1(B) **except for generator**. Hence as per clause 1.5.3 of item no. 4.0 of BDS, the *Subsidiary Company / *JV Company (as the case may be) have associated with and have a Technology Transfer agreement with M/s....., (Qualified Generator Manufacturer) meeting the requirements of clause 1.5.3 of item no. 4.0 of BDS fully in respect of generator. The details are as follows :-

The Qualified Generator Manufacturer have minimum 10% equity participation and shall continue to maintain a minimum equity participation of 10% in the Indian *Subsidiary / *JV Company (as the case may be), for a lock-in period of 7 years from the date of incorporation of the Indian *Subsidiary / *JV Company (as the case may be) or up to the end of defect liability period of the contract whichever is later.

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.00.00	Name, address, email, Tel. No. and Fax of the Qualified Generator Manufacturer			
1.1.0	Name of the reference station and its location			
1.1.1	Name, address, email, Fax No. and Tel. No. of Owner of Plant			
1.1.2	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by Qualified Generator Manufacturer from intermediary organisation			
1.2.0	Name and designation of the responsible person in Owner's organisation			
1.2.1	Name and Designation of the responsible person in intermediary organisation.			
1.03.00	No. of Generator Sets supplied			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.04.00	Contract No. and Date			
1.05.00	Capacity in MW of Unit			
1.06.00	Starting date of project			
1.07.00	Scheduled date of commissioning			
1.08.00	Actual date of commissioning			
1.09.00	Date of commencement of successful operation			
1.10.00	Scope of work for the aforesaid Generator Set includes the following:			
	(a) Designed	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Engineered	*Yes/*No	*Yes/*No	*Yes/*No
	(c) *Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No	*Yes/*No
	(d) *Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No	*Yes/*No
	(e) *Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No	*Yes/*No

** Necessary Documents certificate from the client, in support of Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS are Attached at Annexure..... of this Attachment.

1.2.0 Details of Generator

1.2.1 Generator make and
model No.

1.2.2 Rated MVA

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.02.03	Rated Power Factor			
1.02.04	MW rating			
1.02.05	Rated voltage (kV)			
1.02.06	No. of phases			
1.02.07	No. of poles			
1.02.08	Mounting	*Horizontal / *Vertical	*Horizontal / *Vertical	*Horizontal / *Vertical
1.02.09	Installation	* Indoor/ *Outdoor	* Indoor/ *Outdoor	* Indoor/ *Outdoor
1.02.10	Cylindrical rotor Type	* Yes/*No	* Yes/*No	* Yes/*No
1.02.11	Cooling medium			
	(a) Stator			
	(b) Rotor			
1.2.12	Thermal class of Insulation			
	(a) Stator			
	(b) Rotor			
1.2.13	Date of Commissioning			
1.2.14	Date of Commencement of successful operation			
2.00.00	Certificate(s) from the Owner that the aforesaid Generator Set is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial Bid Opening is furnished at Annexure..... to this Attachment			

3.00.00 Documentary evidence in support
of QR data is enclosed at
Annexure..... to this Attachment

2.5.0 *We confirm that our Associate (QSTGM) is seeking qualification as holding company (singularly or collectively) with its subsidiaries (held directly or indirectly) as per notes No.4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

2.5.1 Associate (QSTGM) and their subsidiary's(ies') (To be filled at page to
Experience Details in respect of meeting of this Attachment)
requirement for QSTGM
(as per clause **1.1.1(B)**), item 4 of BDS

2.5.2 Details of *Subsidiary Company/*Joint (To be filled at page to of
Venture Company registered by the this Attachment)
Associate (QSTGM) in India meeting
requirement of Clause 1.1.2(a) or
1.1.2(b), item 4 of BDS

2.5.3 a) *Name, Address, email, Fax, Tel.
No. of the Subsidiary meeting the
QR for qualified Steam Turbine
*Generator Manufacturer as
per clause 1.1.0 of BDS

2.5.3 b) *Name, Address, email, Fax,
Tel. No. of the Subsidiary
meeting the QR for qualified
Generator Manufacturer as per
clause 1.1.0 of BDS

2.5.4 a) *Name, address, Telephone No.,
Fax and e-mail of subsidiary company
owning the technology for
supercritical Steam Turbine *Generators

2.5.4 b) *Name, address, Telephone No.,
Fax and e-mail of subsidiary company
owning the technology for
supercritical Generators

*We have submitted the experience details in support of Qualifying Requirement at 1.2.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 1.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence

as Annexure..... of this Attachment establishing the relationship between M/s....., (QSTGM) and above subsidiaries.

2.6.0* We confirm that our Associate i.e. M/s have manufactured / supplied in India Eight (8) Nos. supercritical Steam Turbine Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Turbine Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Turbine Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 (a) of Item no. 4 of BDS. Further, we confirm that we shall offer only the type of steam Turbine generator for which our associate is qualified.

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.00.00	Name and location of the reference Station in which the unit is located	
1.1.0	Name, address, email, Tel. no. and Fax of owner of the station	
1.1.1	Name and Designation of the responsible person in owner's organisation	
1.1.2	Capacity of Steam Turbine Generator Unit in MW	
1.1.3	Contract No. & Date	
1.1.4	Starting date of project	
1.1.5	Scheduled date of Commissioning	
1.1.6	Actual date of Commissioning	
1.1.7	Date of commencement of successful operation	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.1.8	Date of commencement of Commercial operation (COD)	
1.1.9	Whether the Steam Turbine Generator is supercritical	Yes*/No*
1.1.10	Scope of work executed by *us / or *associate:	
	a) Manufactured	Yes*/No*
	b) Supplied	Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No*
1.2.0	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set has successfully completed Performance Guarantee Tests prior to the date	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.02.03	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	
2.00.00	Details of Turbine	
2.01.00	Steam Turbine make	
2.02.00	Tandem compound	Yes*/No*
2.03.00	No. of Reheat	
2.04.00	(i) No. of Cylinders:	
	(a) HP	
	(b) IP	
	(c) Combined HP-IP	
	(d) LP	
	(ii) Whether HP and IP cylinders are combined or separate	
2.5.0	Module Number	
	(a) HP Turbine	
	(b) IP Turbine	
	(c) Combined HP-IP turbine (if applicable)	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	(d) LP Turbine	
2.06.00	Main steam pressure (gauge)	
2.07.00	Main steam temperature (deg.C)	
2.08.00	Reheat Steam temperature (deg.C)	
2.09.00	Condensing type	Yes*/No*
2.10.00	Rated speed (RPM) and operating frequency range (Hz)	
2.11.00	No. of Steam Extractions	
2.12.00	Steam Turbine and Generator Directly coupled	Yes*/No*
2.13.00	Steam Turbine Generator Set Installation (Indoor / Outdoor)	
3.00.00	Generator Details	
3.01.00	Generator make and model No.	
3.02.00	Rated MVA	
3.03.00	Rated Power Factor	
3.04.00	MW rating	
3.05.00	Rated voltage (kV)	
3.06.00	No. of phases	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
3.07.00	No. of poles	
3.08.00	Mounting (Horizontal / Vertical)	
3.09.00	Installation (Indoor / Outdoor)	
3.10.00	Cylindrical rotor type	Yes*/No*
3.11.0	Cooling medium	
	(a) Stator	
	(b) Rotor	
3.12.0	Thermal Class of insulation	
	(a) Stator	
	(b) Rotor	
3.13.00	Schedule date of Commissioning	
3.14.00	Actual date of commissioning	
3.15.00	Date of commencement of successful operation	
4.00.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	

#2.6.0 Undertaking w.r.t Deed of Joint Undertaking (DJU) executed by us, our wholly owned subsidiary, the QSTGM, the JV Company, our Associate / our Associate's QSTGM / Indian *Subsidiary / *JV Company (as the case may be), other Promoter having 25% or higher equity participation in the Indian Subsidiary Company / JV Company (as the case may be), *subsidiaries of Holding Company, *qualified generator manufacturer, *Indian manufacturing subsidiary company and *Indian Subsidiary Company / JV Company / Indian Manufacturing Company (as per 1.6.1 of item 4 of BDS)" as per clause 1.5.2 and/or applicable Notes for clause no. 1.0.0 of Item No. 4.0 of BDS is enclosed at Annexure__to this Attachment.

#2.7.0 Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of clause 1.6.1 and/or Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.

Bidder to strike out whichever is not applicable.

* Bidder to strike out whichever is not applicable

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

Note:

1. For the Indian Subsidiary (ies) /JV Company (ies), wherever the lock in period for maintaining equity in compliance to Clause 1.3.1(a) / 1.3.3 / 1.4.1(a) / 1.4.3 / 1.5.1(a) / 1.5.3 (as per item 4 of BDS) are mentioned, the following clause is also applicable:

In case the Indian Subsidiary (ies) /JV Company (ies) (formed for manufacturing Super Critical Steam Generator and/or supercritical Steam Turbine Generator sets) meets the criteria specified under Note No. 13 of "Notes for clause 1.0.0" (as per item 4 of BDS) and has also successfully completed Phased Manufacturing Program (PMP) as per clause 3.0.0 (as per item 4 of BDS), then the bidder would have the option of submitting "Letter of Undertaking" for support from the QSGM and/or QSTGM and/or QGM, as applicable, along with the techno-commercial bid as per the format enclosed at Attachment 3A11(A) in the bidding documents instead of the undertakings / documents for maintaining the minimum equity for the lock-in period mentioned / maintaining the subsidiary status, wherever indicated, in respect of QSGM and/or QSTGM and/or QGM, as applicable.

2. Route 1.2.0 has not been used for the purpose of qualification in Qualifying Requirements. Wherever Clause 1.2.0, 1.2.1, 1.2.2 & 1.2.3 (as per item 4 of BDS) have been referred to either directly or indirectly in any qualification routes / financial criteria, the same should be deemed to have been omitted and qualifying requirements should be read accordingly.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

[Experience details of an Indian Steam Generator and/or Indian Steam Turbine Generator Manufacturer, as per Clause 1.6.0, Item No. 4.0 of BDS]

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

1.0.0 *We, M/s....., an Indian Manufacturing company/ Indian Subsidiary Company / Indian JV Company who is a supercritical Steam Generator Manufacturer, are seeking Qualification as per clause 1.6.0, Item No. 4 of BDS.

*We, M/s..... (an "Indian Manufacturing company/ Indian Subsidiary Company / Indian JV Company", who is a supercritical Steam Turbine Generator Manufacturer, as Bidder), are associating with M/s (*Qualified Steam Generator Manufacturer /*Indian Steam Generator Manufacturer (as per clause 1.2.1 of item 4 of BDS)/ *Indian Subsidiary of a Qualified Steam Generator Manufacturer / *Indian JV Company of a Qualified Steam Generator Manufacturer/* "Indian Manufacturing company/ Indian Subsidiary Company / Indian JV Company" (as per clause 1.6.1 of item 4 of BDS)) and shall source the Steam Generator Set from M/s (Associate) as per clause 1.6.2 item no. 4 of BDS. The details are as follows :

1.1.0 *We confirm that *we or *our Associate have manufactured / supplied in India Eight (8) Nos. supercritical Steam Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 of Item no. 4 of BDS. Further, *we or *our Associate confirm that we shall offer only the type of steam generator for which we or our collaborator / associate (as per clause 1.6.2 of item 4 of BDS) is qualified. We confirm that we have enclosed the 'Letter to ensure satisfactory performance of Steam Turbine Generator & Auxiliaries as per clause no. 1.6.1 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) at Annexure..... to this Attachment.

The details are furnished as below : -

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.00.00	Name and location of the reference Station in which the unit is located								
1.1.0	Name, address, email, Tel. no. and Fax of owner of the station								
1.1.1	Name and Designation of the responsible person in owner's organisation								
1.1.2	Capacity of Steam Generator Unit in MW								
1.1.3	Contract No. & Date								
1.1.4	Starting date of project								
1.1.5	Scheduled date of Commissioning								
1.1.6	Actual date of Commissioning								
1.1.7	Date of commencement of successful operation								
1.1.8	Date of commencement of Commercial operation (COD)								
1.1.9	Whether the Steam Generator is supercritical	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.01.10	Scope of work executed by *us / or *associate:								
	a) Manufactured	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
	b) Supplied	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.01.11	Whether Performance Guarantee Test Successfully completed	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.02.00	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.02.01	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set has successfully completed								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.3	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment								
	Details of Steam Generator								
2.00.00	Name and Address of Steam Generator Set manufacturer								
2.01.00	Steam Generator steam flow capacity at SH outlet (T/Hr.)								
2.02.00	Main Steam Temperature at SH outlet (°C)								
2.03.00	Main Steam Pressure at SH outlet [kg/cm ² (a)]								
2.04.00	Reheat steam flow (T/Hr.)								
2.5.0	a) Reheater outlet pressure [kg/cm ² (a)]								
	b) Reheater outlet temperature (°C)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.06.00	Whether balanced draft type or not								
2.07.00	Type of Steam Generator								
	i) Single pass (tower type) or two pass type (must match with offered type)								
	ii) Once through type	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
2.08.00	Type of circulation system (Natural or Forced Circulation)								
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)								
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m ²)								
2.11.00	Type of coal used								
	i) Max. HHV (Kcal/Kg)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	ii) Min. HHV (Kcal/Kg)								
	iii) Max. Ash content (%)								
	iv) Max. total moisture content (%)								
	v) Volatile matter content (%)								
2.11.1	Type of oil used								
	i) HHV (Kcal/Kg)								
	ii) Sulphur content (%)								
	iii) Viscosity in centistoke at 50°C (Max.°C)								
	iv) Pour point (°C)								
	v) Flash point (°C)								
2.12.0	Fuel (other than pulverised coal fired)								
2.12.1	Type of fuel used								
2.12.2	Firing rate								
2.12.3	Calorific value of fuel (Kcal/kg)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.13.00	Designed Boiler efficiency and corresponding GCV								
2.14.00	Tested boiler efficiency and corresponding GCV								
2.15.00	Tested boiler efficiency corrected to design conditions and corresponding GCV								
2.16.00	a) Whether used for two shifting								
	b) If yes, number of such operations it has been designed for								
	c) No. of actual two shifting cycles it has actually operated on till date								
2.17.0	Minimum start-up time achieved								
	i) Cold (after 72 hrs. of unit shut down)								
	ii) Warm (after 36 hrs. of unit shut down)								
	iii) Hot (after 8 hrs. of unit shut down)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.18.00	Availabilities of steam generator for last two years								
2.19.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators								
*2.0.0	We are associating with M/s (*Qualified Steam Generator Manufacturer /*Indian Steam Generator Manufacturer/ *Indian Subsidiary of a Qualified Steam Generator Manufacturer / *Indian JV Company of a Qualified Steam Generator Manufacturer who is a supercritical Steam Generator Manufacturer and shall source the Steam Generator Set from M/s (Associate) as per clause 1.6.2 item no. 4 of BDS. The details are as follows:								
2.1.0	We confirm that the QSGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of at least one (1) number of pulverised coal fired supercritical Steam Generator having rated capacity of 1500 tones of steam per hour or above. Further, such Steam generator is of the type specified, i.e. single pass (tower type) or two pass type using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing, and is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bidopening.								
	* Further, we confirm that reference Steam Generator is provided with evaporator suitable for variable pressure operation (sub-critical and super-critical pressure ranges). Also, we confirm that offered steam generator is of the same type, having same type of water wall tubing for which reference of Steam Generator has been furnished below The details are as follows :-								

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.00.00	Name, address, e-mail, Tel. No. and Fax No. of the QSGM			

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.01.00	Name and Designation of the responsible person in QSGM			
1.1.0	Name of the reference station and its location			
1.1.1	Name, address, e-mail, Fax No. and Tel. No. of Owner of station			
1.1.2	Name and Designation of the responsible person in Owner's organisation			
1.2.0	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by QSGM from intermediary organisation			
1.2.1	Name and Designation of the responsible person in intermediary organisation			
1.03.00	No. of units & capacity of each unit in MW			

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.04.00	No. of steam generator sets supplied by QSGM for the reference station			
1.05.00	Contract No. & Date			
1.06.00	Starting date of Project			
1.07.00	Scheduled date of Commissioning			
1.08.00	Actual date of Commissioning			
1.09.00	Date of commencement of successful operation			
1.10.00	Whether the Plant is coal fired	Yes*/No*	Yes*/No*	Yes*/No*
1.11.00	Scope of work executed by QSGM for the aforesaid Steam Generator includes the following :			
	a) Designed	Yes*/No*	Yes*/No*	Yes*/No*
	b) Engineered	Yes*/No*	Yes*/No*	Yes*/No*
	c) *Manufactured/*Got manufactured	Yes*/No*	Yes*/No*	Yes*/No*

Sl. No.	Item Description	Station-1	Station-2	Station-3
d)	*Erection/*Supervised erection/**Acted as Advisor for erection	Yes*/No*	Yes*/No*	Yes*/No*
e)	*Commissioned/*Supervised commissioning/**Acted as advisor for commissioning	Yes*/No*	Yes*/No*	Yes*/No*
f)	Whether the plant is in successful operation for a period of one (1) year (minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*

(**In case the QSGM has acted as advisor for erection / commissioning of reference Steam Generator & auxiliaries, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to Note 2 for clause no. 1.0.0 of item 4 of BDS)

- 2.00.00 Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)
- 2.01.00 Main Steam Temperature at SH outlet (°C)
- 2.02.00 Main Steam Pressure at SH outlet [kg/cm²(a)]

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.03.00	Reheat steam flow (T/Hr.)			
2.04.00	a) Reheater outlet pressure [kg/cm ² (a)]			
	b) Reheater outlet temperature (°C)			
2.05.00	Whether balanced draft type or not	*Yes/No*	*Yes/No*	*Yes/No*
2.06.00	Type of Steam Generator			
	i) Single pass (tower type) or two pass type (must match with offered type)			
	ii) Once through type	Yes*/No*	Yes*/No*	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*

(In case the answer to above clause (iii) is "No", in such a case, the Associate shall furnish additional data in support of requirements indicated in clause 2.5.0 to this attachment)

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.07.00	Type of circulation system (Natural or Forced/Assisted)			
2.08.00	Type of Water wall tubes [spiral wound (inclined) or vertical plain or vertical rifled] (must match with offered type)			
2.09.00	Minimum mass flow through the water wall tubes Kg/sec./m ²			
2.10.0	Type of coal used			
	i) Max. HHV (Kcal/Kg)			
	ii) Min. HHV (Kcal/Kg)			
	iii) Max. Ash content (%)			
	iv) Max. total moisture content (%)			
	v) Volatile matter content (%)			
2.10.1	Type of oil used			
	i) HHV (Kcal/Kg)			

Sl. No.	Item Description	Station-1	Station-2	Station-3
	ii) Sulphur content (%)			
	iii) Viscosity in centistoke at 50°C (Max.°C)			
	iv) Pour point (°C)			
	v) Flash point (°C)			
2.11.0	Fuel (other than pulverised coal fired)			
2.11.1	Type of fuel used			
2.11.2	Firing rate			
2.11.3	Calorific value of fuel (Kcal/kg)			
2.12.00	Designed Boiler efficiency and corresponding GCV			
2.13.00	Tested boiler efficiency and corresponding GCV			
2.14.00	Tested boiler efficiency corrected to design conditions and corresponding GCV			
2.15.00	a) Whether used for two shifting	*Yes/No*	*Yes/No*	*Yes/No*

Sl. No.	Item Description	Station-1	Station-2	Station-3
	b) If yes, number of such operations it has been designed for			
	c) No. of actual two shifting cycles it has actually operated on till date			
2.16.0	Minimum start-up time achieved			
	i) Cold (after 72 hrs. of unit shut down)			
	ii) Warm (after 36 hrs. of unit shut down)			
	iii) Hot (after 8 hrs. of unit shut down)			
2.17.00	Availabilities of steam generator for last two years			
2.18.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators			

Sl. No.	Item Description	Station-1	Station-2	Station-3
3.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
3.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
3.02.00	Documentary evidence in case the award for reference work (steam generator set) has been received by Associate (*QSGM / Indian *Subsidiary / *JV Company of QSGM) from Owner of plant or any other intermediary organization			
(i)	Certificate from *Owner of the plant or *intermediary organisation to be furnished by Bidder on behalf of its Associate in support of the claim of meeting requirement at clause 1.1.0 item 4 of BDS as the case			

may be, enclosed at Annexure.....
to this Attachment

- (ii) Certificate from *Owner of the plant to be furnished by Bidder on behalf of its Associate for the successful operation of the Steam Generator Set as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment

Notes :

1. Wherever the term 'coal fired' is appearing above, "coal" shall be deemed to also include bituminous Coal/Sub Bituminous Coal/Brown Coal/Lignite.
-

- 2.2.0 *(a) We confirm that *our Associate (QSGM) have registered an Indian Subsidiary Company M/s..... / *our Associate is an Indian Subsidiary Company of M/s..... (QSGM) registered in India, as per Companies Act of India, for manufacturing **supercritical Steam Generator sets** covering the type, size and rating specified. Further, the Indian Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... is a subsidiary company of M/s..... (QSGM) and shall remain a subsidiary company of the QSGM for a minimum period of 7 years from the date of incorporation of this Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of Indian Subsidiary Company
1.01.00	Equity participation of QSGM in the subsidiary company (In percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSGM's equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSGM)
2.00.00	*Equity participation of other Promoter having Equity equal to or more than 25% in Indian Subsidiary Company
2.01.00	*Lock in period for above equity participation from the date of incorporation

S.No.	Item Description
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure _____ of this Attachment
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure _____ of this Attachment

2.2.0 *(b) We confirm that *our Associate (QSGM) have registered a Joint Venture (JV) Company M/s..... / *our Associate is a Joint Venture Company registered in India, as per Companies Act of India for manufacturing supercritical steam generator sets covering the type, size and rating specified.

The Joint Venture (JV) Company is promoted by (i) M/s....., an Indian Company registered in India under the Companies Act of India and (ii) M/s, a QSGM, who meets the requirement as per the details furnished in clause 1.1.0 above.

The JV Company have obtained certificate for commencement of Business in India as on the date of Techno-Commercial bid opening, (Applicable in case, the JV Company is incorporated as a public limited Company).

We confirm that the QSGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

Further M/s....., one of the promoters is a majority stakeholder who have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The details of the Joint Venture (JV) company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of JV Company
1.01.00	Equity participation of QSGM in the JV company (In percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the QSGM)
2.00.00	Equity participation of the Majority Stake Holder having Equity more than 51% in JV Company

S.No.	Item Description
2.01.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for Majority Stake Holder's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the Majority Stake Holder)
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of JV company is enclosed at Annexure_____ of this Attachment
2.2.0**(b)(i)	We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate) is an entity other than the QSGM, and is an Indian Company and has executed, in the last 10 years, large industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening. The details are as follows:

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			

*Bidder to furnish 2.2.0**(b)(i) & (ii) only when his Associate is a JV Company of QSGM, as per clause 1.4.1(a), item no. 4 of BDS.*

S.No.	Item Description	Project#1	Project#2	Project#3
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence is support of above are attached at Annexure..... of this Attachment			

2.2.0**(b)(ii) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate), an entity other than the QSGM are an Indian Company. Our Associate's Parent Company M/s..... have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4,000 million or more. These projects are in successful operation for a period of not less than one year as on the date of Techno-Commercial bid opening.

We, on behalf of our Associate, confirm that our Associate is a wholly owned subsidiary of their parent company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the Associate (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

2.2.0**(b)(ii) is to be filled in only in pursuance of Note No. 6 of cl. no. 1.0.0 of Item no. 4 of BDS.

The qualification details of the Parent Company are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			

1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence is support of above are attached at Annexure..... of this Attachment			
1.13	Date of Incorporation of JV Company			
1.14	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			

1.15 Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later?

(Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for equity participation of Parent Company in the wholly owned subsidiary company along with lock in period of such equity in compliance to note 6 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)

2.2.0 *(c) We confirm that M/s....., our Associate (an Indian *Subsidiary / *JV Company) / our Associate's *Indian subsidiary / *JV Company, whose details are indicated at *2.2.0(a) / *2.2.0(b) above have registered another **Indian manufacturing Subsidiary Company** M/s....., as per Companies Act of India for manufacturing **supercritical steam generator sets** in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial Bid Opening (Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that the Indian Manufacturing Subsidiary company shall remain a subsidiary of the Indian Subsidiary / JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

2.20*(c) is to be filled in only in pursuance of Note 8 for clause.no. 1.0.0 of Item 4 of BDS.

The details of Indian manufacturing Subsidiary Company are as follows :

1.00.00	Date of Incorporation of Indian manufacturing Subsidiary Company	
1.01.00	Equity participation of the *Indian subsidiary / *JV company in the Indian manufacturing subsidiary company (in percentage of the total equity)	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian manufacturing subsidiary company or upto the end of defect liability period of the contract whichever is later ?	Yes/No
	(Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A-11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to note 8 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Indian *Subsidiary / *JV Company)	
2.00.00	Certificate for commencement of Business in India (if applicable)	

is enclosed at Annexure _____
of this Attachment

- 2.01.00 Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of Indian manufacturing subsidiary company is enclosed at Annexure _____ of this Attachment.

2.3.0 *We confirm that M/s....., (Associate) is seeking qualification as holding company (singularly or collectively) with its subsidiaries (held directly or indirectly) as per notes No.4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

2.3.1 Associate and their subsidiary's (ies') Experience Details in respect of meeting requirement for QSGM (as per clause **1.1.1(A)**), item 4 of BDS (To be filled at page _____ to _____ of this Attachment)

2.3.2 Details of Subsidiary Company/Joint Attachment) Associate in India meeting requirement of Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS (To be filled at page _____ to _____ of _____ Venture Company registered by the this

2.3.3 *Name, Address, email, Fax, Tel. No. of the Subsidiary meeting the QR for QSGM as per clause 1.1.0 of BDS

2.3.4 *Name, address & Telephone No., Fax and e-mail of subsidiary company owning the technology for supercritical steam generators

*We have submitted the experience details in support of Qualifying Requirement at 2.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 2.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (Qualified Steam Generator Manufacturer) and above subsidiaries.

*2.4.0 We confirm that our associate i.e., M/s.....(**Indian Steam Generator Manufacturer**), have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning at least one (1) number pulverised coal fired steam generator for a 500MW or higher size unit, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

(A) The details of Steam Generator are furnished as below:

S.No.	Item Description	Installation No. 1	Installation No. 2	Installation No. 3
1.1.0	Name of the reference station and its location			
1.1.1	Name, address, e-mail ID, Fax and Tel. No. of Owner of Station			
1.1.2	Name, address, e-mail ID, Fax and Tel. No. of intermediary organisation in case the award has been recieved by Indian Steam Generator Manufacturer from intermediary organisation.			
1.1.3	Name and Designation of the responsible person in Owner's organisation			
1.1.4	Name and Designation of the responsible person in Intermediary organisation			
1.1.5	No. of units & capacity of each unit in MW			

1.01.06	No. of steam generator sets supplied by us for reference station			
1.01.07	Contract No. & Date			
1.01.08	Starting date of project			
1.01.09	Scheduled date of commissioning			
1.01.10	(i) Actual date of completion			
	(ii) Date of commencement of Successful operation			
1.01.11	Whether the Plant is pulverised coal fired	Yes*/No*	Yes*/No*	Yes*/No*
1.01.12	Scope of work executed by us for the aforesaid Steam Generator includes the following:			
	a) Designed	Yes*/No*	Yes*/No*	Yes*/No*
	b) Engineered	Yes*/No*	Yes*/No*	Yes*/No*
	c) Manufactured*/ got manufactured*	Yes*/No*	Yes*/No*	Yes*/No*
	d) *Erection/*Supervised erection/**acted as adviser for erection	Yes*/No*	Yes*/No*	Yes*/No*

e)	*Commissioned/*Supervised commissioning/ **acted as adviser for Commissioning	Yes*/No*	Yes*/No*	Yes*/No*
f)	Whether the plant is in successful operation for a period of one (1) year (minimum) prior to the date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*

** Necessary Document certificate from the client, in support of Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS are Attached at Annexure..... of this Attachment.

2.00.00	Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)
2.01.00	Main Steam Temperature at SH outlet (°C)
2.02.00	Main Steam Pressure at SH outlet [kg/cm ² (a)]
2.03.00	Reheat steam flow (T/Hr.)
2.04.00	a) Reheater outlet pressure [kg/cm ² (a)]

	b) Reheater outlet temperature (°C)			
2.05.00	Whether balanced draft type or not			
2.6.0	Type fo Steam Generator			
	i) Single pass (tower type) or two pass type			
	ii) Once through type	Yes*/No*	Yes*/No*	Yes*/No*
2.07.00	Type of circulation system (Natural or Forced/Assisted)			
2.08.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled)			
2.09.00	Minimum mass flow through the water wall tubes Kg/sec./m ²			
2.10.0	Type of coal used			
	i) Max. HHV (Kcal/Kg)			

- ii) Min. HHV (Kcal/Kg)
- iii) Max. Ash content (%)
- iv) Max. total moisture content (%)
- v) Volatile matter content (%)

2.10.1 Type of oil used

- i) HHV (Kcal/Kg)
- ii) Sulphur content (%)
- iii) Viscosity in centistoke
at 50°C (Max.°C)
- iv) Pour point (°C)
- v) Flash point (°C)

2.11.0 Fuel (other than pulverised coal fired)

2.11.1 Type of fuel used

2.11.2 Firing rate

2.11.3 Calorific value of fuel
(Kcal/kg)

2.12.00	Designed Boiler efficiency and corresponding GCV
2.13.00	Tested boiler efficiency and corresponding GCV
2.14.00	Tested boiler efficiency corrected to design conditions and corresponding GCV
2.15.00	a) Whether used for two shifting b) If yes, number of such operations it has been designed for c) No. of actual two shifting cycles it has actually operated on till date
2.16.0	Minimum start-up time achieved i) Cold (after 72 hrs. of unit shut down) ii) Warm (after 36 hrs. of unit shut down)

iii) Hot (after 8 hrs.
of unit shut down)

2.17.00 Availabilities of steam generator
for last two years

2.18.00 Maximum total NOx emission
(thermal as well as fuel) from
the steam generators

3.00.00 Certificate from the Owner of
the reference plant that the
aforesaid Steam Generator is
in successful operation for a
period of not less than one (1)
year prior to the date of Techno-
Commercial bid opening and
caused no serious problem
in past, is furnished alongwith
bid at Annexure

4.00.00 List of all the similar Steam
Generator under execution
alongwith the details such
as order No. & date, order
value and scheduled date
of commissioning is enclosed
separately at Annexure

4.01.00 Documentary evidence in support of QR Data is enclosed at Annexure to this Attachment

Notes :

1. Wherever the term 'coal fired' is appearing above, "coal" shall be deemed to also include bituminous Coal/Sub Bituminous Coal/Brown Coal/Lignite.

(B) We confirm that our Associate i.e. M/s (Indian Steam Generator Manufacturer), have valid ongoing collaboration and technology transfer agreement including license to manufacture and supply supercritical steam generator sets covering the type, size and rating specified, in India with M/s, a Qualified Steam Generator Manufacturer meeting requirements of clause 1.1.1(A), item 4 of BDS, valid minimum up to the end of the defect liability period of the contract. **Further, we confirm that the offered Steam Generator set is of the same type (i.e. single pass (tower type) or two pass type and same type of water wall tubing) for which the collaborator (i.e. Qualified Steam Generator Manufacturer) is qualified.** The details of Qualified Steam Generator Manufacturer, meeting the requirements of clause 1.1.1(A), item 4 of BDS, are as under :

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.00.00	Name, address, email, Tel no. and Fax no. of QSGM			
1.1.0	Name and Designation of the responsible person in QSGM			
1.1.1	Name of the reference station			

and its location

- 1.1.2 Name, address, email, Fax No.
and Tel. No. of Owner of station
- 1.1.3 Name and Designation of
the responsible person in
Owner's organisation
- 1.2.0 Name, address, Fax No.
and Tel. No. of intermediary
organisation in case the
award has been recieved
by Qualified Steam Generator
Manufacturer from intermediary
organisation
- 1.2.1 Name and Designation of
the responsible person in
intermediary organisation
- 1.03.00 No. of units & capacity
of each unit in MW
- 1.04.00 No. of steam generator
sets supplied by us for
the reference station
- 1.05.00 Contract No. & Date
- 1.06.00 Starting date of Project
- 1.07.00 Scheduled date of Commissioning

1.08.00	Actual date of Commissioning			
1.09.00	Date of commencement of successful operation			
1.10.00	Whether the Plant is pulverised coal fired	Yes*/No*	Yes*/No*	Yes*/No*
1.11.00	Scope of work executed by QSGM for the aforesaid Steam Generator includes the following :			
a)	Designed	Yes*/No*	Yes*/No*	Yes*/No*
b)	Engineered	Yes*/No*	Yes*/No*	Yes*/No*
c)	*Manufactured/*Got manufactured	Yes*/No*	Yes*/No*	Yes*/No*
d)	*Erection/*Supervised erection/**Acted as Advisor for erection	Yes*/No*	Yes*/No*	Yes*/No*
e)	*Commissioned/*Supervised commissioning/**Acted as advisor for commissioning	Yes*/No*	Yes*/No*	Yes*/No*
f)	Whether the plant is in successful operation for a period of one (1) year (minimum) prior to the date of bid opening	Yes*/No*	Yes*/No*	Yes*/No*

(**In case the bidder has acted as advisor for erection / commissioning of reference Steam Generator, bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to Note No. 2 for clause no. 1.0.0, Item No. 4 of BDS.)

- 2.00.00 Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)
- 2.01.00 Main Steam Temperature at SH outlet (°C)
- 2.02.00 Main Steam Pressure at SH outlet [kg/cm²(a)]
- 2.03.00 Reheat steam flow (T/Hr.)
- 2.04.00
 - a) Reheater outlet pressure [kg/cm² (a)]
 - b) Reheater outlet temperature (°C)
- 2.05.00 Whether balanced draft type or not
- 2.6.0 Type of Steam Generator
 - i) Single pass (tower type) or two pass type (must match with offered type)

ii)	Once through type	Yes*/No*	Yes*/No*	Yes*/No*
iii)	Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*

(In case the answer to above clause (iii) is "No", in such a case, the bidder shall furnish additional data in support of requirements indicated at Note (5) to clause 1.0.0, Item No. 4 of BDS as detailed in clause 2.5.0)

2.07.00 Type of circulation system
(Natural or Forced/Assisted)

2.08.00 Type of Water wall tubes
[spiral wound (inclined)
or vertical plain or vertical rifled]

2.09.00 Minimum mass flow through
the water wall tubes Kg/sec./m²

2.10.0 Type of coal used

- i) Max. HHV (Kcal/Kg)
- ii) Min. HHV (Kcal/Kg)
- iii) Max. Ash content (%)
- iv) Max. total moisture content (%)

v) Volatile matter
content (%)

2.10.1 Type of oil used

i) HHV (Kcal/Kg)

ii) Sulphur content (%)

iii) Viscosity in centistoke
at 50°C (Max.°C)

iv) Pour point (°C)

v) Flash point (°C)

2.11.0 Fuel (other than pulverised coal fired)

2.11.1 Type of fuel used

2.11.2 Firing rate

2.11.3 Calorific value of fuel
(Kcal/kg)

2.12.00 Designed Boiler efficiency
and corresponding GCV

2.13.00 Tested boiler efficiency and
corresponding GCV

- 2.14.00 Tested boiler efficiency corrected to design conditions and corresponding GCV
- 2.15.00 a) Whether used for two shifting
- b) If yes, number of such operations it has been designed for
- c) No. of actual two shifting cycles it has actually operated on till date
- 2.16.0 Minimum start-up time achieved
- i) Cold (after 72 hrs. of unit shut down)
- ii) Warm (after 36 hrs. of unit shut down)
- iii) Hot (after 8 hrs. of unit shut down)
- 2.17.00 Availabilities of steam generator for last two years
- 2.18.00 Maximum total NO_x emission (thermal as well as fuel) from the steam generators

Sl. No.	Item Description	Station-1	Station-2	Station-3
3.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
3.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
3.2.0	Documentary evidence in case the award for reference work (steam generator set) has been received by Qualified Steam Generator Manufacturer from Owner of plant or any other intermediary organization			

Sl. No.	Item Description	Station-1	Station-2	Station-3
(i)	Certificate from *Owner of the plant or *intermediary organisation to be furnished by Bidder (for Qualified Steam Generator Manufacturer) in support of the claim of meeting requirement of Note (3) of clause 1.0.0 item 4 of BDS as the case may be, enclosed at Annexure..... to this Attachment			
(ii)	Certificate from Owner of the plant to be furnished by Bidder (for Qualified Steam Generator Manufacturer) for the successful operation of the Steam Generator Set as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment			

TO BE FILLED IN BY THE BIDDER WHOSE ASSOCIATE IS SEEKING QUALIFICATION AS PER CLAUSE 1.1.1(A), ITEM 4 OF BDS READ IN CONJUNCTION WITH NOTE 5 TO CLAUSE 1.0.0, ITEM 4 OF BDS (I.E. IF THE ANSWER TO SUB-CLAUSE 2.06.00(iii) TO CLAUSE 2.1.0 / 2.4.0 ABOVE IS "NO")

2.5.0 We, confirm that M/s _____(supercritical Steam Generator Manufacturer) meets all the requirement as per 1.1.1(A), Item 4 of BDS except that the evaporator indicated in the reference steam generator is not designed for variable pressure operation and is designed for constant pressure (Universal Pressure) operation only, and is seeking qualification along with the original technology owner (Licensor) with whom he has an ongoing license agreement (which covers technology transfer), as on the date of Techno-Commercial bid opening, for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges).

Further, we confirm that original technology owner (Licensor) has experience of providing variable pressure design steam generator technology for at least one (1) no. of pulverised coal fired supercritical steam generator for a 1500 T/hr or higher capacity using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing with the evaporator suitable for variable pressure operation in sub-critical and super-critical pressure ranges and which is/are in successful operation for a period of not less than one (1) year prior to the date of **Techno-Commercial** bid opening.

We further confirm that we have offered only the type of steam generator i.e. single pass (tower type) or two pass type for which we are qualified and have offered only the type of water wall tubing (either spiral wound (inclined) or vertical plain or vertical rifled type) for which our licensor is qualified. The details of Licensor and his experience details are as follows:-

**I. Details of Technology Owner
(Licensor)**

1.01.00 Name of the original technology owner (Licensor)

1.02.00 Address, Email ID & Tel No. & Fax

1.03.00 Name and Designation of the Responsible person in the Organization

1.04.00 Licensing agreement for max. Capacity rating of Steam Generator (in MW)

1.05.00 Date of Start of Licensing agreement

1.06.00 Date of End of Licensing agreement

1.07.00 Whether Scope of licensing agreement covers for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges).

*Yes/*No

1.08.00 Copy of relevant portion of
Licensing agreement attached
at Annexure.....

**II. Details of experience of
Technology Owner (Licensor)**

1.01.00 Name of the reference station
and its location

1.02.00 Client name and its address,
Fax No. & Tel.No., email ID

1.03.00 Actual date of completion/
date of commencement of
Successful operation

1.04.00	Whether the Plant is in Successful operation	*Yes/*No	*Yes/*No	*Yes/*No

1.05.00 Scope of work executed for
the aforesaid Steam Generator
includes the following:

i)	Designed	Yes*/No*	Yes*/No*	Yes*/No*
ii)	Engineered	Yes*/No*	Yes*/No*	Yes*/No*

	iii)	Whether the plant is in successful operation for a period of one (1) year (Minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*
1.06.00	i) ii)	Supercritical Steam Generator Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)	Yes*/No*	Yes*/No*	Yes*/No*
1.07.00	Type of Steam Generator				
	i)	Single pass (tower type) or two pass type (must match with offered type)			
	i)	Once through type	Yes*/No*	Yes*/No*	Yes*/No*
	iii)	Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*
1.08.00	Type of Water wall tubes (Spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)				

1.09.00	Type of firing (Coal)	Yes*/No*	Yes*/No*	Yes*/No*
1.10.0	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
1.11.00	Undertaking w.r.t Deed of Joint Undertaking (DJU) as per performa enclosed at attachment-3I of Book 1 of 3, Sec-VII (Forms & Procedures) is furnished along with the bid at Annexure			

Notes :

- Wherever the term 'coal fired' is appearing above, "coal" shall be deemed to also include bituminous Coal/Sub Bituminous Coal/Brown Coal/Lignite.
-

#2.6.0 Undertaking w.r.t Deed(s) of Joint Undertaking (DJU) executed by us, our Associate, our Associate's *QSGM / Indian *Subsidiary Company / *JV Company (as the case may be), *Other Promoter having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (as the case may be), *subsidiaries of Holding Company (the Associate) and *the manufacturing subsidiary Company, *Technology Owner (Licensor) of supercritical steam generator, *Indian Steam Generator Manufacturing Company, *"Indian Subsidiary Company/Indian JV Company/ Indian Manufacturing Company" as per clause 1.6.2 and/or applicable Notes for clause no. 1.0.0 of Item No. 4 of BDS is enclosed at Annexure.....to this Attachment.

#2.7.0 Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.

Bidder to strike out whichever is not applicable.

* Bidder to strike out whichever is not applicable

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common seal).....

3.0.0 *We, M/s....., an “Indian Manufacturing company/ Indian Subsidiary Company / Indian JV Company” who is a supercritical Steam Turbine Generator Manufacturer, are seeking Qualification as per clause 1.6.0, Item No. 4 of BDS.

*We, M/s..... (an “Indian Manufacturing company/ Indian Subsidiary Company / Indian JV Company”, who is a supercritical Steam Generator Manufacturer, as Bidder), are associating with M/s (*Qualified Steam Turbine Generator Manufacturer /*Indian Steam Turbine Generator Manufacturer (as per clause 1.2.1 of item 4 of BDS)/ *Indian Subsidiary of a Qualified Steam Turbine Generator Manufacturer / *Indian JV Company of a Qualified Steam Turbine Generator Manufacturer/* “Indian Manufacturing company/ Indian Subsidiary Company / Indian JV Company” (as per clause 1.6.1 of item 4 of BDS)) and shall source the Steam Turbine Generator Set from M/s (Associate) as per clause 1.6.2 item no. 4 of BDS. The details are as follows :

3.1.0 *We confirm that *we or *our Associate have manufactured / supplied in India Eight (8) Nos. supercritical Steam Turbine Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Turbine Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Turbine Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 of Item no. 4 of BDS. Further, *we or *our Associate confirm that we shall offer only the type of Steam Turbine Generator for which we or our collaborator / associate (as per clause 1.6.2 of item 4 of BDS) is qualified.

The details are furnished as below : -

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.00.00	Name and location of the reference Station in which the unit is located								
1.1.0	Name, address, email, Tel. no. and Fax of owner of the station								
1.1.1	Name and Designation of the responsible person in owner's organisation								
1.1.2	Capacity of Steam Turbine Generator Unit in MW								
1.1.3	Contract No. & Date								
1.1.4	Starting date of project								
1.1.5	Scheduled date of Commissioning								
1.1.6	Actual date of Commissioning								
1.1.7	Date of commencement of successful operation								
1.1.8	Date of commencement of Commercial operation (COD)								
1.1.9	Whether the Steam Turbine Generator is supercritical	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.1.10	Scope of work executed by *us / or*associate:								
	a) Manufactured	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
	b) Supplied	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.01.11	Whether Performance Guarantee Test Successfully completed	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.02.00	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.02.01	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set has successfully completed								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.3	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment								
2.00.00	Details of Turbine								
2.01.00	Steam Turbine make								
2.02.00	Tandem compound	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
2.03.00	No. of Reheat								
2.4.0	(i) No. of Cylinders:								
	(a) HP								
	(b) IP								
	(c) Combined HP-IP								
	(d) LP								
	(ii) Whether HP and IP cylinders are combined or separate								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.5.0	Module Number								
	(a) HP Turbine								
	(b) IP Turbine								
	(c) Combined HP-IP turbine (if applicable)								
	(d) LP Turbine								
2.06.00	Main steam pressure (gauge)								
2.07.00	Main steam temperature (deg.C)								
2.08.00	Reheat Steam temperature (deg.C)								
2.09.00	Condensing type	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
2.10.00	Rated speed (RPM) and operating frequency range (Hz)								
2.11.00	No. of Steam Extractions								
2.12.00	Steam Turbine and Generator Directly coupled	Yes*/No*	*Yes*/No*	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.13.00	Steam Turbine Generator Set Installation (Indoor / Outdoor)								
3.00.00	Generator Details								
3.01.00	Generator make and model No.								
3.02.00	Rated MVA								
3.03.00	Rated Power Factor								
3.04.00	MW rating								
3.05.00	Rated voltage (kV)								
3.06.00	No. of phases								
3.07.00	No. of poles								
3.08.00	Mounting (Horizontal / Vertical)								
3.09.00	Installation (Indoor / Outdoor)								
3.10.00	Cylindrical rotor type	Yes*/No*	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
3.11.0	Cooling medium								
	(a) Stator								
	(b) Rotor								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
3.12.0	Thermal Class of insulation								
	(a) Stator								
	(b) Rotor								
3.13.00	Schedule date of Commissioning								
3.14.00	Actual date of commissioning								
3.15.00	Date of commencement of successful operation								
4.00.00	Documentary evidence in support Of QR data enclosed at Annexure -----.								

4.0.0 We are associating with M/s (*Qualified Steam Turbine Generator Manufacturer /*Indian Steam Turbine Generator Manufacturer (as per clause 1.2.1 of item 4 of BDS)/ *Indian Subsidiary of a Qualified Steam Turbine Generator Manufacturer / *Indian JV Company of a Qualified Steam Turbine Generator Manufacturer. The details are as follows:

4.1.0 We confirm that the QSTGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of (i) at least one (1) number supercritical steam turbine of tandem compound, condensing, reheat type of 500 MW or above capacity with main steam pressure of 225 Kg/cm² (gauge) or higher and main steam / reheat temperature of 565° C / 565° C or higher and (ii) at least one (1) number of generator of two pole, Thermal class 155 (F) winding insulation, hydrogen / water cooled stator and hydrogen / water cooled rotor of 500 MW or above capacity. These steam turbine and generator are in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening. The details are as follows :-

S No.	Item Description	For Steam Turbine	For Generator (if separate station)
		----- Station-1, 2, 3	----- Station-1, 2, 3
1.00.00	Name, address, e-mail, Tel. No. and Fax No. of the QSTGM		
1.01.00	Name and Designation of the responsible person in QSTGM		
1.1.0	Name of the reference station and its location		
1.1.1	Name, address, Fax No., e-mail and Tel. No. of Owner of the reference station		

- 1.1.2 Name, address, Fax No.,
e-mail and Tel. No. of
intermediary organisation
in case the award has
been recieved by QSTGM
from intermediary organisation
- 1.2.0 Name and Designation of the
responsible person in
Owner's organisation
- 1.2.1 Name and Designation of
the responsible person in
intermediary organisation
- 1.03.00 No. of Steam Turbine
Generator Sets supplied by
QSTGM for the station
- 1.04.00 Contract No. and Date
- 1.05.00 Capacity in MW of Unit
- 1.06.00 Starting date of project
- 1.07.00 Scheduled date of commissioning
- 1.08.00 Actual date of commissioning

1.09.00	Date of commencement of successful operation		
1.10.00	Scope of work executed by QSTGM for the aforesaid Steam Turbine Generator Set includes the following:		
(a)	Designed	*Yes/*No	*Yes/*No
(b)	Engineered	*Yes/*No	*Yes/*No
(c)	*Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No
(e)	*Commissioned/*Super vised Commissioning/ **Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No

f)	Whether the plant is in successful operation for a period of one (1) year (minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*

(**In case the QSTGM has acted as advisor for erection / commissioning of reference Steam Turbine & Generator, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS)

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3

2.00.00 Details of Turbine

2.01.00 Steam Turbine make

2.02.00 Tandem compound	*Yes/*No	*Yes/*No	*Yes/*No

2.03.00 No. of Reheat

- 2.4.0
 - (i) No. of Cylinders:
 - (a) HP
 - (b) IP
 - (c) Combined HP-IP
 - (d) LP
 - (ii) Whether HP and IP cylinders are combined or separate
- 2.5.0 Module Number
 - (a) HP Turbine
 - (b) IP Turbine
 - (c) Combined HP-IP turbine (if applicable)
 - (d) LP Turbine
- 2.06.00 Main steam pressure (gauge)
- 2.7.0 Main steam temperature (deg.C)

2.08.00	Reheat Steam temperature (deg.C)			
2.09.00	Condensing type	*Yes/*No	*Yes/*No	*Yes/*No
2.10.00	Rated speed (RPM) and operating frequency range (Hz)			
2.11.00	No. of Steam Extractions			
2.12.00	Steam Turbine and Generator Directly coupled	*Yes/*No	*Yes/*No	*Yes/*No
2.13.00	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.00.00	Generator Details			
3.01.00	Generator make and model No.			
3.02.00	Rated MVA			
3.03.00	Rated Power Factor			
3.04.00	MW rating			
3.05.00	Rated voltage (kV)			

3.06.00	No. of phases			
3.07.00	No. of poles			
3.08.00	Mounting	* Hori- zontally/ *Vertical	* Hori- zontally/ *Vertical	* Hori- zontally/ *Vertical
3.09.00	Installation	* Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.10.00	Cylindrical rotor type	*Yes/*No	*Yes/*No	*Yes/*No
3.11.00	Cooling medium			
	(a) Stator			
	(b) Rotor			
3.12.0	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			
3.13.00	Schedule date of Commissioning			
3.14.00	Actual date of commissioning			

- 3.15.00 Date of commencement of successful operation
- 4.0.0 Certificate(s) from the Owner of the reference Plant that the aforesaid Steam Turbine *Generator Set (as applicable) is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial Bid Opening is furnished at Annexure..... to this Attachment
- 4.01.00 Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment
- 4.02.00 Documentary evidence in case the award for reference work (steam turbine generator set) has been received by Associate (*QSTGM / Indian *Subsidiary / *JV Company of QSTGM) from Owner of plant or any other intermediary organization
- (i) Certificate from *Owner of the plant or *intermediary organisation to be furnished by Bidder on behalf of its Associate in support of the claim

of meeting requirement at clause
1.1.0 item 4 of BDS as the case
may be, enclosed at Annexure.....
to this Attachment

- (ii) Certificate from *Owner of the plant
to be furnished by Bidder on behalf
of its Associate for the successful
operation of the Steam Turbine
Generator Set as specified at requirement
stipulated at clause 1.1.0, item 4
of BDS, as the case may be,
enclosed at Annexure.... to this Attachment

4.2.0 *(a) We confirm that *our Associate, a QSTGM, have registered an Indian Subsidiary Company M/s..... / *our Associate is an Indian Subsidiary Company of M/s (QSTGM) registered in India, as per Companies Act of India, for manufacturing **supercritical steam turbine generator sets** covering the type, size and rating specified. Further the Indian Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s is a subsidiary company of M/s..... (QSTGM) and shall remain a subsidiary company of the QSTGM for a minimum period of 7 years from the date of incorporation of this Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

*We confirm that the QSTGM meets the requirement of clause 1.1.1(B) of Item No. 4.0 of BDS **except for Generator** and accordingly, the Indian Subsidiary Company have associated and have a technology transfer agreement with M/s..... (**Qualified Generator Manufacturer**) who meets the the requirement in respect of generator as per clause 1.1.4 of Item No. 4.0 of BDS. M/s..... (Qualified Generator Manufacturer) have minimum 10% equity participation and shall continue to maintain equity participation of minimum 10% in the said Indian Subsidiary Company for a lock in period of 7 years from the date of incorporation of this Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

- 1.00.00 Date of Incorporation of Indian Subsidiary Company
- 1.01.00 Equity participation of Qualified Steam Turbine Generator* manufacturer in the subsidiary company (In percentage of the total equity)
- 1.02.00 Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSTGM's equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM)
- 2.00.00 *Equity participation of other Promoter having Equity more than 25% in Indian Subsidiary Company
- 2.01.00 *Lock in period for above equity participation from the date of incorporation.
- 3.00.00 *Equity participation of Qualified

Generator manufacturer, in the Indian Subsidiary company.

3.01.00 *Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian subsidiary company or upto the end of defect liability period of the contract whichever is later? *Yes/*No

(Qualified Generator manufacturer to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for their equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.4 of Item No. 4.0 of BDS supported by Board Resolution of the Qualified Generator manufacturer)

4.00.00 Certificate for commencement of Business in India (if applicable) is enclosed at Annexure _____ of this Attachment

4.01.00 Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure _____ of this Attachment

4.2.0 *(b) We confirm that *our Associate, a QSTGM, have registered a Joint Venture (JV) Company M/s..... / *our Associate is a Joint Venture Company registered in India, as per Companies Act of India, for manufacturing **supercritical steam turbine generator set** covering the type, size and rating specified. The Joint Venture (JV) Company is promoted by (i) M/s....., an Indian Company registered in India under the Companies Act of India and (ii) M/s....., a **QSTGM**, who meets the requirement as per the details furnished in clause 1.1.0 above.

The JV Company have obtained certificate for commencement of Business in India as on the date of Techno-Commercial bid opening, (Applicable in case, the JV Company is incorporated as a public limited Company).

We further confirm that the QSTGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

Further M/s....., one of the promoters is a majority stakeholder who have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

*We further confirm that the QSTGM meets the requirement of clause 1.1.1(B) of Item No. 4.0 of BDS except for Generator and accordingly, the JV Company have associated and have a technology transfer agreement with M/s.....(**Qualified Generator Manufacturer**) who meets the the requirement in respect of generator as per clause 1.1.4 of Item No. 4.0 of BDS. M/s..... (Qualified Generator Manufacturer) have minimum 10% equity participation and shall continue to maintain equity participation of minimum 10% in the JV Company for a lock in period of 7 years from the date of incorporation of this JV Company or up to the end of the defect liability period of the contract whichever is later.

The details of the Joint Venture (JV) company are as follows :

- 1.00.00 Date of Incorporation of JV Company
- 1.01.00 Equity participation of **Qualified Steam Turbine Generator*** manufacturer in the JV company (In percentage of the total equity)

1.02.00 Lock in period for above equity participation from the date of incorporation

(Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSTGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM)

2.00.00 Equity participation of the Majority Stake Holder having Equity more than 51% in JV Company

2.01.00 Lock in period for above equity participation from the date of incorporation

(Majority Stake Holder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for their equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the Majority Stake Holder)

3.00.00 *Equity participation of Qualified
Generator manufacturer in the
JV Company

3.01.00 *Whether Lock-in period for above
equity participation is seven years
from the date of incorporation of
Indian JV company or upto the
end of defect liability period of
the contract whichever is later? *Yes/*No

(Qualified Generator Manufacturer to
furnish a letter of undertaking as
per format enclosed at Attachment
3A-11 for their equity participation in the
JV Company along with lock in period of
such equity in compliance to clause 1.1.4
of Item No. 4.0 of BDS supported by Board
Resolution of the Qualified Generator
Manufacturer)

4.00.00 Certificate for commencement of
Business in India (if applicable)
is enclosed at Annexure _____
of this Attachment

4.01.00 Copy of Certificate of Incorporation
and Memorandum of Association of
JV company is enclosed at Annexure
_____ of this Attachment

4.2.0**(b)(i) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate) is an entity other than the QSTGM and is an Indian Company and has executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening. The details are as follows:

*Bidder to furnish 4.2.0**(b)(i) & (ii) only when his Associate is a JV Company of QSTGM, as per clause 1.4.1(a), Item No. 4 of BDS.*

S.No.	Item Description	Project#1	Project#2	Project#3
1.00	Name of the reference station & its Location			
1.01	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.02	Name and designation of the responsible person in Owner's organisation			
1.03	Contract No. & date			
1.04	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.05	Starting date of Project			
1.06	Scheduled date of Commissioning			
1.07	Actual date of Commissioning			

S.No.	Item Description	Project#1	Project#2	Project#3
1.08	Date of Commencement of successful Operation			
1.09	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence is support of above are attached at Annexure..... of this Attachment			

4.2.0**(b)(ii) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate), an entity other than the QSTGM are an Indian Company. Our Associate's **Parent Company** M/s have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4,000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening.

We, on behalf of our Associate, confirm that our Associate is a wholly owned subsidiary of thier Parent Company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the Associate (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

The qualification details of the Parent Company are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and designation of the responsible person in Owner's organisation			

4.2.0**(b)(ii) is to be filled in only in pursuance of Note No. 6 of cl. no. 1.1.0 of Item no. 4 of BDS.

1.03	Contract No. & date			
1.04	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.05	Starting date of Project			
1.06	Scheduled date of Commissioning			
1.07	Actual date of Commissioning			
1.08	Date of Commencement of successful Operation			
1.09	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No

-
- 1.11 Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening
- 1.12 Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment

Details of JV Company

- 1.13 Date of Incorporation of JV Company
- 1.14 Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)
- 1.15 Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later? *Yes/*No
- (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for equity participation of Parent Company in the

wholly owned subsidiary company
along with lock in period of such
equity in compliance to note 6 for
clause 1.0.0 of Item No. 4.0 of BDS
supported by Board Resolution of
the Parent Company)

4.2.0*(c) We confirm that M/s our Associate (an Indian *Subsidiary / *JV Company) / our Associate's *Indian subsidiary / *JV Company, whose details are indicated at *4.2.0(a) / *4.2.0(b) above, have registered **another Indian manufacturing Subsidiary Company** M/s....., as per Companies Act of India for manufacturing **supercritical steam turbine generator sets** in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial Bid Opening(Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that M/s....., the manufacturing company, shall remain a subsidiary of the Indian Subsidiary / JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

4.2.0*(c) is to be filled in only in pursuance of Note 8 for clause.no. 1.0.0 of Item 4 of BDS.

The details of Indian manufacturing Subsidiary Company are as follows :

1.00.00 Date of Incorporation of Indian
Manufacturing Subsidiary Company

1.01.00 Equity participation of the *Indian
Subsidiary / *JV company
in the Indian Manufacturing
Subsidiary Company
(in percentage of the total equity)

1.02.00 Whether Lock-in period for above
equity participation is seven years
from the date of incorporation of

*Yes/*No

Indian manufacturing subsidiary company or upto the end of defect liability period of the contract whichever is later ?

(Bidder to furnish a letter of undertaking as per format enclose at Attachment 3A11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to note 8 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the *Indian subsidiary/*JV company)

- 2.00.00 Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
- 2.01.00 Copy of Certificate of Incorporation and Article of Association and Memorandum of Association of Indian manufacturing subsidiary company is enclosed at Annexure_____of this Attachment
-

4.3.0** We confirm that Associate i.e. M/s....., **a super critical steam turbine manufacturer** meets the requirements of clause 1.1.1(B) **except for generator**. Hence, as per clause 1.6.4 of item no. 4.0 of BDS, the Subsidiary Company / JV Company (as the case may be) have associated with and have a Technology Transfer agreement with M/s....., (Qualified Generator Manufacturer) meeting the requirements of clause 1.6.4 of item no. 4.0 of BDS fully in respect of generator. The details are as follows :-

The Qualified Generator Manufacturer have minimum 10% equity participation and shall continue to maintain a minimum equity participation of 10% in the Indian Subsidiary / JV Company (as the case may be), for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary / JV Company (as the case may be) or up to the end of defect liability period of the contract whichever is later.

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.00.00	Name of the reference station and its location			
1.1.0	Name, address, email, Fax No. and Tel. No. of Owner of Plant			
1.1.1	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by Qualified Generator Manufacturer from intermediary organisation			
1.2.0	Name and Designation of the responsible person in Owner's organisation			
1.2.1	Name and Designation of the responsible person in intermediary organisation.			

1.03.00 No. of Generator Sets supplied

1.04.00 Contract No. and Date

1.05.00 Capacity in MW of Unit

1.06.00 Starting date of project

1.07.00 Scheduled date of completion

1.08.00 Actual date of completion

1.09.00 Date of commencement of
successful operation

1.10.00 Scope of work for the
aforesaid Generator Set
includes the following:

(a)	Designed	*Yes/*No	*Yes/*No	*Yes/*No
(b)	Engineered	*Yes/*No	*Yes/*No	*Yes/*No
(c)	*Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No	*Yes/*No
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No	*Yes/*No

(e)	*Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No	*Yes/*No

** Necessary Documents /Certificate from the client, in support of Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS are Attached at Annexure..... of this Attachment.

1.02.00 Details of Generator

1.02.01 Generator make and
model No.

1.02.02 Rated MVA

1.02.03 Rated Power Factor

1.02.04 MW rating

1.02.05 Rated voltage (kV)

1.02.06 No. of phases

1.02.07 No. of poles

1.02.08	Mounting	*Hori- zontal/ *Vertical	*Hori- zontal/ *Vertical	*Hori- *Vertical

1.02.09	Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor

1.02.10	Cylindrical rotor Type	*Yes/*No	*Yes/*No	*Yes/*No
1.02.11	Cooling medium			
	(a) Stator			
	(b) Rotor			
1.2.12	Thermal class of Insulation			
	(a) Stator			
	(b) Rotor			
1.2.13	Date of Commissioning			
1.2.14	Date of Commencement of successful operation			
2.00.00	Certificate(s) from the Owner that the aforesaid Generator Set is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial Bid Opening is furnished at Annexure..... to this Attachment			

3.00.00 Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment

4.4.0 *We confirm that M/s....., (Associate) is seeking qualification as holding company (singularly or collectively) with their subsidiaries (held directly or indirectly) as per notes No. 4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
4.4.1	Associate and their Subsidiary's(ies') Experience details in respect of the meeting requirement for QSTGM (as per clause 1.1.1(B)) , item 4 of BDS	(To be filled at page this Attachment)	to	of
4.4.2	Details of Subsidiary Company/Joint Venture Company registered by the Associate in India meeting requirement of Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS	(To be filled at page this Attachment)	to	of

- 4.4.3 a) *Name, Address, email, Fax,
Tel. No. of the Subsidiary
meeting the QR for supercritical
Steam Turbine Manufacturer as per
clause 1.1.0 of BDS
- b) *Name, Address, email, Fax,
Tel. No. of the Subsidiary
meeting the QR for Generator
Manufacturer as per clause
1.1.0 of BDS
- 4.4.4 a) *Name, address, Telephone No.,
Fax and e-mail of subsidiary company
owning the technology for
supercritical steam turbine
- b) *Name, address, Telephone No.,
Fax and e-mail of subsidiary company
owning the technology for
generator

*We have submitted the experience details in support of Qualifying Requirement at 4.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 4.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (**Qualified Steam Turbine Generator Manufacturer**) and above subsidiaries.

4.5.0 We confirm that our associate i.e., M/s....., **(Indian Steam Turbine Generator Manufacturer)**, have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning at least one (1) number of reheat type of steam turbine and generator set of 500MW or above capacity, which are in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bidopening.

(A) The details of Steam Turbine Generator are furnished asbelow:

S.No.	Item Description	Installation No. 1	Installation No. 2	Installation No. 3
1.00.00	Name of the reference station and its location			
1.1.0	Name, address, Fax No. e-mail and Tel. No. of Owner of Station			
1.1.1	Name, address, Fax No. e-mail and Tel. No. of intermediary organisation in case the award has been recieved by Indian Steam Turbine Generator Manufacturer from intermediary Organisation			
1.2.0	Name and Designation of the responsible person in Owner's organisation			
1.2.1	Name and Designation of the responsible person in intermediary organisation			
1.03.00	No. of Steam Turbine Generator Sets supplied for the Station			

1.04.00	Contract No. and Date	
1.05.00	Unit Capacity in MW	
1.06.00	Starting Date of the Project	
1.07.00	Schedule Date of Commissioning	
1.08.00	Actual Date of Commissioning	
1.09.00	Date of Commencement of Successful Operation	
1.10.00	Scope of work executed for the aforesaid Steam Turbine and Generator includes the following:	
	(i) Designed	*Yes/*No
	(ii) Engineered	*Yes/*No
	(iii) Manufactured*/got manufactured*	*Yes/*No
	(iv) *Erected / *Supervised Erection / **acted as adviser for Erection	*Yes/*No
	(v) *Commissioned / *Supervised Commissioning / **acted as adviser for Commissioning	*Yes/*No

** Necessary Documents/Certificate from the client, in support of Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS are Attached at Annexure..... of this Attachment.

2.00.00 Details of Steam Turbine

2.1.1 Steam Turbine make

2.1.2 Tandem Compound / Cross Compound

2.1.3 No. of Reheat

2.1.4 No. of Cylinders:

(i) HP

(ii) IP

(iii) Combined HP & IP

(iv) LP

2.1.5 Module Number

(i) HP Turbine

(ii) IP Turbine

(iii) LP Turbine

(iv) Combined HP & IP
turbine (if applicable)

2.1.6 Main Steam Pressure (Gauge)

2.1.7 Main Steam Temperature (deg.C)

2.1.8 Reheat Steam Temperature (deg.C)

2.1.9 Exhaust Pressure (Gauge)

2.1.10	Type of Turbine	*Condensing /*Non Condensing	*Condensing /*Non Condensing	*Condensing /*Non Condensing

2.1.11 Rated speed (RPM) and
operating frequency range (Hz)

2.1.12 No. of Steam Extractions
for regeneration

3.00.00 Details of Generator

3.1.1 Generator make and model No.

3.1.2 Generator MVA Rating

3.1.3 Generator MW Rating

3.1.4 Rated Power Factor

- 3.1.5 Rated voltage (kV)
- 4.00.00 Certificate from the Owner that the aforesaid Steam Turbine Generator Set is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial Bid Opening, and caused no serious problem in past, is furnished at Annexure.... to this Attachment
- 4.01.01 List of all the similar Steam Turbine Generator under execution along with the details such as order No. & date, order value and scheduled date of commissioning is enclosed separately at Annexure
- 4.02.00 Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment

(B) We, confirm that our associate i.e. M/s Indian Steam Turbine Generator Manufacturer, have valid ongoing collaboration and technology transfer agreement including license to manufacture and supply supercritical steam turbine generator sets covering the type, size and rating specified, in India with M/s....., a Qualified Steam Turbine Generator Manufacturer meeting requirements of clause 1.1.1(B), item 4 of BDS, valid minimum up to the end of the defect liability period of the contract. The details of Qualified Steam Turbine Generator Manufacturer, meeting the requirements of clause 1.1.1(B), item 4 of BDS, are as under :

S No.	Item Description	For Steam Turbine ----- Station-1, 2, 3	For Generator (if separate station) ----- Station-1, 2, 3
1.00.00	Name, address, email, Tel no. and Fax no. of QSTGM		
1.1.0	Name and Designation of the responsible person in QSTGM		
1.1.1	Name of the reference station and its location		
1.1.2	Name, address, Fax No., e-mail and Tel. No. of Owner of station		
1.1.3	Name, address, Fax No., e-mail and Tel. No. of intermediary organisation in case the award has been recieved by Qualified Steam Turbine Generator Manufacturer from intermediary organisation		
1.02.00	Name and Designation of the responsible person in Owner's organisation		

S No.	Item Description	For Stean Turbine ----- Station-1, 2, 3	For Generator (if separate station) ----- Station-1, 2, 3
1.02.01	Name and Designation of the responsible person in intermediary organisation		
1.03.00	No. of Steam Turbine Generator Sets supplied by QSTGM for the station		
1.04.00	Contract No. and Date		
1.05.00	Capacity in MW of Unit		
1.06.00	Starting date of project		
1.07.00	Scheduled date of commissioning		
1.08.00	Actual date of commissioning		
1.09.00	Date of commencement of successful operation		
1.10.00	Scope of work executed by QSTGM for the aforesaid Steam Turbine Generator Set includes the following :		

S No.	Item Description	For Stean Turbine ----- Station-1, 2, 3	For Generator (if separate station) ----- Station-1, 2, 3
(a)	Designed	*Yes/No	*Yes/No
(b)	Engineered	*Yes/No	*Yes/No
(c)	*Manufactured / *Got Manufactured	*Yes/No	*Yes/No
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/No	*Yes/No
(e)	*Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/No	*Yes/No

** Necessary Documents / certificate from the client, in support of Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS are Attached at Annexure..... of this Attachment.

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3

2.00.00 Details of Turbine

2.01.00 Steam Turbine make

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.02.00	Tandem compound	*Yes/*No	*Yes/*No	*Yes/*No
2.03.00	No. of Reheat			
2.4.0	(i) No. of Cylinders:			
	(a) HP			
	(b) IP			
	(c) Combined HP-IP			
	(d) LP			
	(ii) Whether HP and IP cylinders are combined or separate			
2.5.0	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP turbine (if applicable)			
	(d) LP Turbine			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.06.00	Main steam pressure (gauge)			
2.07.00	Main steam temperature (deg.C)			
2.08.00	Reheat Steam temperature (deg.C)			
2.09.00	Condensing type	*Yes/*No	*Yes/*No	*Yes/*No
2.10.00	Rated speed (RPM) and operating frequency range (Hz)			
2.11.00	No. of Steam Extractions			
2.12.00	Steam Turbine and Generator Directly coupled	*Yes/*No	*Yes/*No	*Yes/*No
2.13.00	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.00.00	Generator Details			
3.01.00	Generator make and model No.			
3.02.00	Rated MVA			
3.03.00	Rated Power Factor			

3.04.00 MW rating

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3

3.05.00 Rated voltage (kV)

3.06.00 No. of phases

3.07.00 No. of poles

3.08.00	Mounting	* Horizon- tally/*Verti- cal	* Horizon- tally/*Verti- cal	* Horizon- tally/*Ver- tical

3.09.00	Installation	* Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor

3.10.00	Cylindrical rotor type	* Yes/*No	* Yes/*No	* Yes/*No

3.11.00 Cooling medium

(a) Stator

(b) Rotor

3.12.0 Thermal Class of insulation

(a) Stator

(b) Rotor

3.13.00 Schedule date of Commissioning

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
3.14.00	Actual date of commissioning			
3.15.00	Date of commencement of successful operation			
4.0.0	Certificate(s) from the Owner that the aforesaid Steam Turbine Generator Set /Steam Turbine / Generator (as applicable) is in successful operation for a period of not less than one (1) year prior to date of Techno- Commercial Bid Opening, and caused no serious problem in the past, is furnished at Annexure..... to this Attachment			
4.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
4.02.00	Documentary evidence in case the award for reference work (steam turbine generator set) has been received by Qualified Steam Turbine Generator Manufacturer from Owner of plant or any other intermediary organization			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	(i) Certificate from *Owner of the plant or *intermediary organisation to be furnished by bidder (for Qualified Steam Turbine Generator Manufacturer) in support of the claim of meeting requirement of Note (3) of clause 1.0.0 item 4 of BDS as the case may be, enclosed at Annexure..... to this Attachment			
	(ii) Certificate from Owner of the plant to be furnished by bidder (for Qualified Steam Turbine Generator Manufacturer) for the successful operation of the Steam Turbine Generator Set as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment			

(C) *M/s....., a super critical steam turbine manufacturer meets the requirements of clause 1.1.1(B) of Item No. 4.0 of BDS **except for generator**. Hence, as per clause 1.2.3 of Item No. 4.0 of BDS, we have associated and have a Technology Transfer agreement with M/s....., (Qualified Generator Manufacturer) meeting the requirements of clause 1.2.3 of Item No. 4.0 of BDS fully in respect of generator. The details are as follows:-

- 1.00.00 Name, address, email, Tel no.
and Fax no. of Qualified Generator
Manufacturer
- 1.1.0 Name of the reference station
and its location
- 1.1.1 Name, address, email, Fax No.
and Tel. No. of Owner of Plant
- 1.1.2 Name, address, email, Fax No.
and Tel. No. of intermediary
organisation in case the award
has been recieved by Qualified
Generator Manufacturer from
intermediary organisation.
- 1.2.0 Name and Designation of the
responsible person in Owner's
organisation
- 1.2.1 Name and Designation of the
responsible person in intermediary
organisation
- 1.03.00 No. of Generator Sets supplied
- 1.04.00 Contract No. and Date
- 1.05.00 Capacity in MW of Unit

1.06.00	Starting date of project			
1.07.00	Scheduled date of commissioning			
1.08.00	Actual date of commissioning			
1.09.00	Date of commencement of successful operation			
1.10.00	Scope of work for the aforesaid Generator Set includes the following:			
(a)	Designed	*Yes/*No	*Yes/*No	*Yes/*No
(b)	Engineered	*Yes/*No	*Yes/*No	*Yes/*No
(c)	*Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No	*Yes/*No
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No	*Yes/*No
(e)	*Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No	*Yes/*No

** Necessary Documents / certificate from the client, in support of Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS are Attached at Annexure..... of this Attachment.

1.02.00 Details of Generator

1.02.01 Generator make and model No.

1.02.02 Rated MVA

1.02.03 Rated Power Factor

1.02.04 MW rating

1.02.05 Rated voltage (KV)

1.02.06 No. of phases

1.02.07 No. of poles

1.02.08	Mounting	*Horizontal/ *Vertical	*Horizontal/ *Vertical	*Horizontal/ *Vertical

1.02.09	Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor

1.02.10	Cylindrical rotor Type	* Yes/*No	* Yes/*No	* Yes/*No

1.2.11 Cooling medium

(a) Stator

(b) Rotor

1.2.12 Thermal class of Insulation

(a) Stator

(b) Rotor

1.2.13 Date of Commissioning

1.2.14 Date of Commencement
of successful operation

2.00.00 Certificate(s) from the Owner that
the aforesaid Generator Set is in
successful operation for a period
of not less than one (1) year prior
to date of Techno-Commercial Bid
Opening, and caused no serious
problem in past, is furnished at
Annexure..... to this Attachment

3.00.00 Documentary evidence in support
of QR data is enclosed at
Annexure..... to this Attachment

#4.6.0 Undertaking w.r.t Deed(s) of Joint Undertaking (DJU) executed by us, our Associate, our Associate's *QSTGM / *QGM/ Indian *Subsidiary Company / *JV Company (as the case may be), *Other Promoter having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (as the case may be), *subsidiaries of Holding Company (the Associate) and *the manufacturing subsidiary Company,*Technology Owner (Licensor) of supercritical steam generator, *Indian Steam Generator Manufacturing Company, *"Indian Subsidiary Company/Indian JV Company/ Indian Manufacturing Company" as per clause 1.6.2 and/or 1.6.4 and/or applicable Notes for clause no. 1.0.0 of Item No. 4 of BDS is enclosed at Annexure.....to this Attachment.

#4.7.0 Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.

Bidder to strike out whichever is not applicable.

* Bidder to strike out whichever is not applicable

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common seal).....

Note: Route 1.2.0 has not been used for the purpose of qualification in Qualifying Requirements. Wherever Clause 1.2.0, 1.2.1, 1.2.2 & 1.2.3 (as per item 4 of BDS) have been referred to either directly or indirectly in any qualification routes / financial criteria, the same should be deemed to have been omitted and qualifying requirements should be read accordingly.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

[Experience details of an Engineering, Procurement and Construction (EPC) Organisation as Bidder, as per Clause 1.7.0, Item No. 4.0 of BDS]

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

1.0.0 We, M/s....., a company having experience of 500 MW or above supercritical units on EPC basis are seeking Qualification as per clause 1.7.0, Item No. 4 of BDS.

1.1.0 *We confirm that we have executed on Engineering, Procurement and Construction (EPC) basis, minimum one (1) no. 500MW or above Pulverised coal fired supercritical unit comprising of at least Steam Generator and Steam Turbine Generator Sets along with their associated auxiliary equipments, Electrostatic Precipitators / Bag Filters, Switchyard, Coal handling plant, Ash handling plant, Cooling Towers, Condenser Cooling Water System, including associated Civil works for the above equipments and systems, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening, as per clause 1.7.1(a) of Item No. 4 of BDS.

*We meet the requirement as per clause 1.7.1(a), Item No. 4 of BDS, except for Electrostatic Precipitators / Bag Filters, Switchyard, Coal handling plant, Ash handling plant, Cooling Towers, Condenser Cooling Water System. **Additionally, we meet the requirement as per clause 4.1.0(b) of Item No. 4 of BDS.**

*We meet the requirement as per clause 1.7.1(a) of Item No. 4 of BDS, except for Electrostatic Precipitators / Bag Filters, Switchyard, Coal handling plant, Ash handling plant, Cooling Towers, Condenser Cooling Water System. Additionally, we are associating with M/s.....a **Project Management Organisation (PMO)** who meets the requirement as per clause 4.1.0(b) of Item No. 4 of BDS.

The details are furnished as below : -

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.00.00	Name of the reference station and its location			

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.01.00	Name, address, email, Tel. no. and Fax of owner of the station			
1.01.01	Name and Designation of the responsible person in owner's organisation			
1.01.02	No. of units & Capacity of each unit in MW			
1.01.03	No. of steam generator & steam turbine generator sets supplied for the reference station			
1.01.04	Contract No. & Date			
1.01.05	Starting date of project			
1.01.06	Scheduled date of Commissioning			
1.01.07	Actual date of Commissioning			
1.01.08	Date of commencement of successful operation			
1.01.09	Whether the Plant has coal fired supercritical unit	Yes*/No*	Yes*/No*	Yes*/No*
1.01.10	Scope of work executed by us on EPC basis as detailed below :			
a)	*Engineered/*got Engineered	Yes*/No*	Yes*/No*	Yes*/No*
b)	*Supplied / *Procured	Yes*/No*	Yes*/No*	Yes*/No*
c)	Erected	Yes*/No*	Yes*/No*	Yes*/No*
d)	Commissioned	Yes*/No*	Yes*/No*	Yes*/No*

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.01.11	Whether the scope of work included :			
i)	Steam Generator sets along with their associated auxiliary equipments	Yes*/No*	Yes*/No*	Yes*/No*
ii)	Steam Turbine Generator sets along with their associated auxiliary equipments	Yes*/No*	Yes*/No*	Yes*/No*
iii)	Electrostatic Precipitators / Bag Filters	Yes*/No*	Yes*/No*	Yes*/No*
iv)	Switchyard	Yes*/No*	Yes*/No*	Yes*/No*
v)	Coal Handling Plant	Yes*/No*	Yes*/No*	Yes*/No*
vi)	Ash Handling Plant	Yes*/No*	Yes*/No*	Yes*/No*
vii)	Cooling Towers	Yes*/No*	Yes*/No*	Yes*/No*
viii)	Condenser Cooling Water System	Yes*/No*	Yes*/No*	Yes*/No*
ix)	Associated Civil Works	Yes*/No*	Yes*/No*	Yes*/No*

Details of Steam Generator

- 2.00.00 Name and Address of Steam Generator Set manufacturer
- 2.01.00 Steam Generator steam flow capacity at SH outlet (T/Hr.)
- 2.02.00 Main Steam Temperature at SH outlet (°C)
- 2.03.00 Main Steam Pressure at SH outlet [kg/cm²/(a)]

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.04.00	Reheat steam flow (T/Hr.)			
2.05.00	a) Reheater outlet pressure [kg/cm ² (a)]			
	b) Reheater outlet temperature (°C)			
2.06.00	Whether balanced draft type or not			
2.07.00	Type of Steam Generator			
	i) Single pass (tower type) or two pass type			
	ii) Once through type	Yes*/No*	Yes*/No*	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*
2.08.00	Type of circulation system (Natural or Forced Circulation)			
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled)			
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m ²)			
2.11.00	Type of coal used			
	i) Max. HHV (Kcal/Kg)			

Sl. No.	Item Description	Station-1	Station-2	Station-3
	ii) Min. HHV (Kcal/Kg)			
	iii) Max. Ash content (%)			
	iv) Max. total moisture content (%)			
	v) Volatile matter content (%)			
2.11.1	Type of oil used			
	i) HHV (Kcal/Kg)			
	ii) Sulphur content (%)			
	iii) Viscosity in centistoke at 50°C (Max.°C)			
	iv) Pour point (°C)			
	v) Flash point (°C)			
2.12.0	Fuel (other than pulverised coal fired)			
2.12.1	Type of fuel used			
2.12.2	Firing rate			
2.12.3	Calorific value of fuel (Kcal/kg)			
2.13.00	Designed Boiler efficiency and corresponding GCV			
2.14.00	Tested boiler efficiency and corresponding GCV			
2.15.00	Tested boiler efficiency corrected to design conditions and corresponding GCV			

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.16.00	a) Whether used for two shifting			
	b) If yes, number of such operations it has been designed for			
	c) No. of actual two shifting cycles it has actually operated on till date			
2.17.0	Minimum start-up time achieved			
	i) Cold (after 72 hrs. of unit shut down)			
	ii) Warm (after 36 hrs. of unit shut down)			
	iii) Hot (after 8 hrs. of unit shut down)			
2.18.00	Availabilities of steam generator for last two years			
2.19.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators			

Details of Steam Turbine Generator

3.00.00	Name and address of steam turbine generator set manufacturer
3.01.00	No. of Steam Turbine Generator set supplied for the station
3.02.00	Capacity of Turbine Generator Set in MW of unit
3.03.00	Steam Turbine make & model

Sl. No.	Item Description	Station-1	Station-2	Station-3
3.04.00	*Tandem Compound / *Cross Compound			
3.05.00	No. of Reheat			
3.6.0	No. of Cylinders			
	(a) HP			
	(b) IP			
	(c) LP			
	(d) Whether HP & IP cylinders are combined	*Yes/*No	*Yes/*No	*Yes/*No
3.7.0	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP Turbine (if applicable)			
	(d) LP Turbine			
3.08.00	Main Steam Pressure (gauge)			
3.09.00	Main Steam Temperature (deg C)			
3.10.00	Reheat Steam Temperature (deg C)			
3.11.00	Exhaust Pressure (ata)			
3.12.00	Condensing Type			

Sl. No.	Item Description	Station-1	Station-2	Station-3
3.13.00	Rated Speed (rpm) and Operating Frequency Range (Hz)			
3.14.00	No. of Steam extractions			
3.15.00	Steam Turbine and Generator coupled directly	*Yes/*No	*Yes/*No	*Yes/*No
3.16.00	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
4.00.00	Generator Details			
4.01.00	Generator make and model No.			
4.02.00	Rated MVA			
4.03.00	Rated Power Factor			
4.04.00	MW rating			
4.05.00	Rated voltage (kV)			
4.06.00	No. of phases			
4.07.00	No. of poles			
4.08.00	Mounting	* Hori- zontally/ *Vertical	* Hori- zontally/ *Vertical	* Hori- zontally/ *Vertical
4.09.00	Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
4.10.00	Cylindrical rotor type	* Yes/*No	* Yes/*No	* Yes/*No
4.11.0	Cooling medium			

Sl. No.	Item Description	Station-1	Station-2	Station-3
	(a) Stator			
	(b) Rotor			
4.12.0	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			
4.13.00	List of balance power plant equipments and their manufacturers name(s) for the referred station is enclosed at Annexure.....			
5.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator and Steam Turbine Generator Set with their Associated Auxilliaries and facilities is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
5.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
6.00.00	List of all the similar Power Plants under execution on EPC basis along with the details such as order no. & date, order value and scheduled date of commissioning is enclosed separately at Annexure.....			

Sl. No.	Item Description	Station-1	Station-2	Station-3

7.00.00 List of all the similar Power Plants executed on EPC basis (including associated civil works) along with the date of commissioning is enclosed separately at Annexure.....

2.0.0 *We, M/s..... (Bidder), confirm that we have executed at least one (1) no. of coal / lignite fired reheat type of unit of at least 200 MW which is in succesful operation for a period of not less than one (1) year prior to date of Techno-Commercial bid opening, as per clause no. 4.1.0(b), Item no. 4 of BDS.

*We are associating with M/s....., a Project Management Organisation (PMO), who have carried out project management work of at least one (1) no. of coal / lignite fired reheat type of unit of at least 200 MW which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Comemrcial bid opening, as per clause 4.1.0(b), Item no. 4 of BDS.

The details are furnished as below :

Sl. No.	Item Description	Station-1	Station-2	Station-3

1.00.00 Name, address, Tel. No., Fax No. and email of the Project Management Organisation (PMO)

1.01.00 Name and Designation of the responsible person in the PMO

1.02.00 Name of the reference station and its location

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.02.01	Name, address, email, Tel. no. and Fax of owner of the station			
1.02.02	Name and Designation of the responsible person in owner's organisation			
1.02.03	No. of units & Capacity of each unit in MW			
1.02.04	Contract No. & Date			
1.02.05	Starting date of project			
1.02.06	Scheduled date of Commissioning			
1.02.07	Actual date of Commissioning			
1.02.08.	Date of commencement of successful operation			
1.02.09	Whether the Plant is coal fired or lignite fired	*Yes/*No	*Yes/*No	*Yes/*No
1.02.10	Whether the plant is reheat type	*Yes/*No	*Yes/*No	*Yes/*No
1.02.11	Scope of work executed by *us / *PMO as detailed below :			
a)	Engineering management	Yes*/No*	*Yes/*No	*Yes/*No
b)	Procurement management	Yes*/No*	*Yes/*No	*Yes/*No
c)	Construction management	Yes*/No*	*Yes/*No	*Yes/*No
d)	*Commissioning / *Supervision of Commissioning	Yes*/No*	*Yes/*No	*Yes/*No

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.02.12	Whether the scope of work included :			
i)	Steam Generator sets along with their associated auxiliaries	*Yes/No*	*Yes/No*	*Yes/No*
ii)	Steam Turbine Generator sets along with their associated auxiliaries	*Yes/No*	*Yes/No*	*Yes/No*
iii)	Electrostatic Precipitators / Bag filters	*Yes/No*	*Yes/No*	*Yes/No*
iv)	Switchyard	*Yes/No*	*Yes/No*	*Yes/No*
v)	Coal Handling Plant	*Yes/No*	*Yes/No*	*Yes/No*
vi)	Ash Handling Plant	*Yes/No*	*Yes/No*	*Yes/No*
vii)	Cooling Towers	*Yes/No*	*Yes/No*	*Yes/No*
vi)	Condenser Cooling Water System	*Yes/No*	*Yes/No*	*Yes/No*

Details of Steam Generator

2.00.00	Name and Address of Steam Generator Set manufacturer
2.01.00	Steam Generator steam flow capacity at SH outlet (T/Hr.)
2.02.00	Main Steam Temperature at SH outlet (°C)
2.03.00	Main Steam Pressure at SH outlet [kg/cm ² /(a)]
2.04.00	Reheat steam flow (T/Hr.)

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.05.00	a) Reheater outlet pressure [kg/cm ² (a)]			
	b) Reheater outlet temperature (°C)			
2.06.00	Whether balanced draft type or not	*Yes/No*	*Yes/No*	*Yes/No*
2.07.00	Type of Steam Generator			
	i) Single pass (tower type) or two pass type			
	ii) Once through type	*Yes/No*	*Yes/No*	*Yes/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)			
2.08.00	Type of circulation system (Natural or Forced Circulation)			
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled)			
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m ²)			
2.11.00	Type of fuel used			
2.11.01	Firing rate			
2.11.02	Calorific value of fuel (Kcal/kg)			

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.12.00	Designed Boiler efficiency and corresponding GCV			
2.13.00	Tested boiler efficiency and corresponding GCV			
2.14.00	Tested boiler efficiency corrected to design conditions and corresponding GCV			
2.15.00	a) Whether used for two shifting	*Yes/No*	*Yes/No*	*Yes/No*
	b) If yes, number of such operations it has been designed for			
	c) No. of actual two shifting cycles it has actually operated on till date			
2.16.0	Minimum start-up time achieved			
	i) Cold (after 72 hrs. of unit shut down)			
	ii) Warm (after 36 hrs. of unit shut down)			
	iii) Hot (after 8 hrs. of unit shut down)			
2.17.00	Availabilities of steam generator for last two years			
2.18.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators			

Sl. No.	Item Description	Station-1	Station-2	Station-3

Details of Steam Turbine Generator

3.00.00	Name and address of steam turbine generator set manufacturer			
3.01.00	No. of Steam Turbine Generator set supplied for the station			
3.02.00	Capacity of Turbine Generator Set in MW of unit			
3.03.00	Steam Turbine make & model			
3.04.00	*Tandem Compound / *Cross Compound			
3.05.00	No. of Reheat			
3.6.0	No. of Cylinders			
	(a) HP			
	(b) IP			
	(c) LP			
	(d) Whether HP & IP cylinders are combined	*Yes/*No	*Yes/*No	*Yes/*No
3.7.0	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP Turbine (if applicable)			
	(d) LP Turbine			

Sl. No.	Item Description	Station-1	Station-2	Station-3
3.08.00	Main Steam Pressure (gauge)			
3.09.00	Main Steam Temperature (deg C)			
3.10.00	Reheat Steam Temperature (deg C)			
3.11.00	Exhaust Pressure (ata)			
3.12.00	Condensing Type			
3.13.00	Rated Speed (rpm) and Operating Frequency Range (Hz)			
3.14.00	No. of Steam extractions			
3.15.00	Steam Turbine and Generator coupled directly			
3.16.00	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
4.00.00	Generator Details			
4.01.00	Generator make and model No.			
4.02.00	Rated MVA			
4.03.00	Rated Power Factor			
4.04.00	MW rating			
4.05.00	Rated voltage (kV)			
4.06.00	No. of phases			
4.07.00	No. of poles			

Sl. No.	Item Description	Station-1	Station-2	Station-3
4.08.00	Mounting	*Hori-/ zontally/ *Vertical	*Hori-/ zontally/ *Vertical	*Hori-/ *Vertical *Vertical
4.09.00	Installation	* Indoor/ *Outdoor	* Indoor/ *Outdoor	* Indoor/ *Outdoor
4.10.00	Cylindrical rotor type	* Yes/*No	* Yes/*No	* Yes/*No
4.11.00	Cooling medium			
	(a) Stator			
	(b) Rotor			
4.12.0	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			
5.00.00	List of balance power plant equipments and their manuf- acturers name(s) for the referred stations is enclosed at Annexure.....			
6.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator and Steam Turbine Generator Set with their associated auxiliaries and facilities is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			

Sl. No.	Item Description	Station-1	Station-2	Station-3
6.01.00	Documentary evidence in support of above QR data is enclosed at Annexure..... to this Attachment			
7.00.00	List of all the similar Power Plants under execution on EPC basis along with the details such as order no. & date, order value and scheduled date of commissioning is enclosed separately at Annexure.....			
8.00.00	List of all the similar Power Plants executed by *us / *PMO, where scope of work included Engineering management, Procurement management, Construction management and commissioning / supervision of comissioning, along with the date of commissioning is enclosed separately at Annexure.....			
9.00.00	Undertaking w.r.t Deed of Joint Undertaking (DJU) executed by us and the Project Management Organisation (PMO) as per clause no. 4.1.0(b) of Item No. 4 of BDS is enclosed at Annexure _____ to this Attachment.			

3.0.0 We are associating with M/s(*Qualified Steam Generator Manufacturer / Indian *Subsidiary of Qualified Steam Generator Manufacturer / *JV Company of Qualified Steam Generator Manufacturer) and shall source the Steam Generator Set from M/s (Associate) as per clause 1.7.2(i) item no. 4 of BDS. The details are as follows:

3.1.0 We confirm that the QSGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of at least one (1) number of pulverised coal fired supercritical Steam Generator having rated capacity of 1500 tones of steam per hour or above. Further, such Steam generator is of the type specified, i.e. single pass (tower type) or two pass type using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing, and is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening.

* Further, we confirm that reference Steam Generator is provided with evaporator suitable for variable pressure operation (sub-critical and super-critical pressure ranges). Also, we confirm that offered steam generator is of the same type, having same type of water wall tubing for which reference of Steam Generator has been furnished below The details are as follows :-

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.00.00	Name, address, e-mail, Tel. No. and Fax No. of the QSGM			
1.01.00	Name and Designation of the responsible person in QSGM			
1.1.0	Name of the reference station and its location			
1.1.1	Name, address, e-mail, Fax No. and Tel. No. of Owner of station			
1.1.2	Name and Designation of the responsible person in Owner's organisation			
1.2.0	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by QSGM from intermediary organisation			
1.2.1	Name and Designation of the responsible person in intermediary organisation			

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.03.00	No. of units & capacity of each unit in MW			
1.04.00	No. of steam generator sets supplied by QSGM for the reference station			
1.05.00	Contract No. & Date			
1.06.00	Starting date of Project			
1.07.00	Scheduled date of Commissioning			
1.08.00	Actual date of Commissioning			
1.09.00	Date of commencement of successful operation			
1.10.00	Whether the Plant is coal fired	Yes*/No*	Yes*/No*	Yes*/No*
1.11.00	Scope of work executed by QSGM for the aforesaid Steam Generator includes the following :			
a)	Designed	Yes*/No*	Yes*/No*	Yes*/No*
b)	Engineered	Yes*/No*	Yes*/No*	Yes*/No*
c)	*Manufactured/*Got manufactured	Yes*/No*	Yes*/No*	Yes*/No*
d)	*Erection/*Supervised erection/**Acted as Advisor for erection	Yes*/No*	Yes*/No*	Yes*/No*
e)	*Commissioned/*Supervised commissioning/**Acted as advisor for commissioning	Yes*/No*	Yes*/No*	Yes*/No*

Sl. No.	Item Description	Station-1	Station-2	Station-3
	f) Whether the plant is in successful operation for a period of one (1) year (minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*
(**In case the QSGM has acted as advisor for erection / commissioning of reference Steam Generator & auxiliaries, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to Note 2 for clause no. 1.0.0 of item 4 of BDS)				
2.00.00	Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)			
2.01.00	Main Steam Temperature at SH outlet (°C)			
2.02.00	Main Steam Pressure at SH outlet [kg/cm ² (a)]			
2.03.00	Reheat steam flow (T/Hr.)			
2.04.00	a) Reheater outlet pressure [kg/cm ² (a)]			
	b) Reheater outlet temperature (°C)			
2.05.00	Whether balanced draft type or not	*Yes/No*	*Yes/No*	*Yes/No*
2.6.0	Type of Steam Generator			
	i) Single pass (tower type) or two pass type (must match with offered type)			

Sl. No.	Item Description	Station-1	Station-2	Station-3

ii)	Once through type	Yes*/No*	Yes*/No*	Yes*/No*
iii)	Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*

(In case the answer to above clause (iii) is "No", in such a case, the Associate shall furnish additional data in support of requirements indicated in clause 3.4.0 to this attachment)

- 2.07.00 Type of circulation system
(Natural or Forced/Assisted)
- 2.08.00 Type of Water wall tubes
[spiral wound (inclined)
or vertical plain or vertical rifled]
(must match with offered type)
- 2.09.00 Minimum mass flow through
the water wall tubes Kg/sec./m²
- 2.10.0 Type of coal used
- i) Max. HHV (Kcal/Kg)
 - ii) Min. HHV (Kcal/Kg)
 - iii) Max. Ash content (%)
 - iv) Max. total moisture content (%)
 - v) Volatile matter content (%)
- 2.10.1 Type of oil used
- i) HHV (Kcal/Kg)

Sl. No.	Item Description	Station-1	Station-2	Station-3
	ii) Sulphur content (%)			
	iii) Viscosity in centistoke at 50°C (Max.°C)			
	iv) Pour point (°C)			
	v) Flash point (°C)			
2.11.0	Fuel (other than pulverised coal fired)			
2.11.1	Type of fuel used			
2.11.2	Firing rate			
2.11.3	Calorific value of fuel (Kcal/kg)			
2.12.00	Designed Boiler efficiency and corresponding GCV			
2.13.00	Tested boiler efficiency and corresponding GCV			
2.14.00	Tested boiler efficiency corrected to design conditions and corresponding GCV			
2.15.00	a) Whether used for two shifting	*Yes/No*	*Yes/No*	*Yes/No*
	b) If yes, number of such operations it has been designed for			
	c) No. of actual two shifting cycles it has actually operated on till date			

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.16.0	Minimum start-up time achieved			
	i) Cold (after 72 hrs. of unit shut down)			
	ii) Warm (after 36 hrs. of unit shut down)			
	iii) Hot (after 8 hrs. of unit shut down)			
2.17.00	Availabilities of steam generator for last two years			
2.18.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators			
3.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
3.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
3.02.00	Documentary evidence in case the award for reference work (steam generator set) has been received by Associate (*QSGM / Indian *Subsidiary / *JV Company of QSGM) from Owner of plant or any other intermediary organization			

Sl. No.	Item Description	Station-1	Station-2	Station-3
(i)	Certificate from *Owner of the plant or *intermediary organisation to be furnished by Bidder on behalf of its Associate in support of the claim of meeting requirement at clause 1.1.0 item 4 of BDS as the case may be, enclosed at Annexure..... to this Attachment			
(ii)	Certificate from *Owner of the plant to be furnished by Bidder on behalf of its Associate for the successful operation of the Steam Generator Set as specified at requirement stipulated at clause 1.1.0 item 4 of BDS, as the case may be, enclosed at Annexure..... to this Attachment			

Notes :

- Wherever the term 'coal fired' is appearing above, "coal" shall be deemed to also include bituminous Coal/Sub Bituminous Coal/Brown Coal/Lignite.

3.2.0 *(a) We confirm that *our Associate (QSGM) have registered an Indian Subsidiary Company M/s..... / *our Associate is an Indian Subsidiary Company of M/s..... (QSGM) registered in India, as per Companies Act of India, for manufacturing **supercritical Steam Generator sets** covering the type, size and rating specified. Further, the Indian Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s..... is a subsidiary company of M/s..... (QSGM) and shall remain a subsidiary company of the QSGM for a minimum period of 7 years from the date of incorporation of this Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of Indian Subsidiary Company
1.01.00	Equity participation of QSGM in the subsidiary company (In percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSGM's equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSGM)
2.00.00	*Equity participation of other Promoter having Equity equal to or more than 25% in Indian Subsidiary Company
2.01.00	*Lock in period for above equity participation from the date of incorporation
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure_____ of this Attachment

3.2.0 *(b) We confirm that *our Associate (QSGM) have registered a Joint Venture (JV) Company M/s..... / *our Associate is a Joint Venture Company registered in India, as per Companies Act of India for manufacturing supercritical steam generator sets covering the type, size and rating specified.

The Joint Venture (JV) Company is promoted by (i) M/s....., an Indian Company registered in India under the Companies Act of India and (ii) M/s, a QSGM, who meets the requirement as per the details furnished in clause 1.1.0 above.

The JV Company have obtained certificate for commencement of Business in India as on the date of Techno-Commercial bid opening, (Applicable in case, the JV Company is incorporated as a public limited Company).

We confirm that the QSGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

Further M/s....., one of the promoters is a majority stakeholder who have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

The details of the Joint Venture (JV) company are as follows :

S.No.	Item Description
1.00.00	Date of Incorporation of JV Company
1.01.00	Equity participation of QSGM in the JV company (In percentage of the total equity)
1.02.00	Lock in period for above equity participation from the date of incorporation

S.No.	Item Description
	(Bidder to furnish a letter of under-taking as per format enclosed at Attachment 3A11 for QSGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the QSGM)
2.00.00	Equity participation of the Majority Stake Holder having Equity more than 51% in JV Company
2.01.00	Lock in period for above equity participation from the date of incorporation
	(Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for Majority Stake Holder's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the Majority Stake Holder)
3.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment
3.01.00	Copy of Certificate of Incorporation and Memorandum of Association of JV company is enclosed at Annexure_____ of this Attachment

3.2.0**(b)(i) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate) is an entity other than the QSGM, and is an Indian Company and has executed, in the last 10 years, large industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening. The details are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of successful Operation			
1.9	Value of above projects (in INR Million)			

*Bidder to furnish 3.2.0**(b)(i) & (ii) only when his Associate is a JV Company of QSGM, as per clause 1.4.1(a), item no. 4 of BDS.*

S.No.	Item Description	Project#1	Project#2	Project#3
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence is support of above are attached at Annexure..... of this Attachment			

3.2.0**(b)(ii) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate), an entity other than the QSGM are an Indian Company. Our Associate's Parent Company M/s have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4,000 million or more. These projects are in successful operation for a period of not less than one year as on the date of Techno-Commercial bid opening.

We, on behalf of our Associate, confirm that our Associate is a wholly owned subsidiary of thier parent company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the Associate (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

3.2.0**(b)(ii) is to be filled in only in pursuance of Note No. 6 of cl. no. 1.0.0 of Item no. 4 of BDS.

The qualification details of the Parent Company are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.04	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.05	Starting date of Project			
1.06	Scheduled date of Commissioning			
1.07	Actual date of Commissioning			
1.08	Date of Commencement of successful Operation			
1.09	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No

S.No.	Item Description	Project#1	Project#2	Project#3
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.12	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			
1.13	Date of Incorporation of JV Company			
1.14	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			
1.15	Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later? (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for equity participation of Parent Company in the wholly owned subsidiary company along with lock in period of such equity in compliance to note 6 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)			

3.2.0 *(c) We confirm that M/s....., our Associate (an Indian *Subsidiary / *JV Company) / our Associate's *Indian subsidiary / *JV Company, whose details are indicated at *3.2.0(a) / *3.2.0(b) above have registered another **Indian manufacturing Subsidiary Company** M/s....., as per Companies Act of India for manufacturing **supercritical steam generator sets** in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial Bid Opening

(Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that the Indian Manufacturing Subsidiary company shall remain a subsidiary of the Indian Subsidiary / JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian manufacturing Subsidiary Company are as follows :

1.00.00	Date of Incorporation of Indian manufacturing Subsidiary Company	
1.01.00	Equity participation of the *Indian subsidiary / *JV company in the Indian manufacturing subsidiary company (in percentage of the total equity)	
1.02.00	Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian manufacturing subsidiary company or upto the end of defect liability period of the contract whichever is later ?	Yes/No

3.20*(c) is to be filled in only in pursuance of Note 8 for clause.no. 1.0.0 of Item 4 of BDS.

(Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A-11 for the above equity participation in the Indian manufacturing Subsidiary Company along with lock in period of such equity in compliance to note 8 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Indian *Subsidiary / *JV Company)

2.00.00	Certificate for commencement of Business in India (if applicable) is enclosed at Annexure _____ of this Attachment
2.01.00	Copy of Certificate of Incorporation and Article of Association and

Memorandum of Association of
Indian manufacturing subsidiary
company is enclosed at
Annexure _____ of this
Attachment.

3.3.0 *We confirm that M/s....., (Associate) is seeking qualification as holding company (singularly or collectively) with its subsidiaries (held directly or indirectly) as per notes No.4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

3.3.1 Associate and their subsidiary's (ies') (To be filled at page to _
Experience Details in respect of meeting of this Attachment)
requirement for QSGM
(as per clause **1.1.1(A)**), item 4 of BDS

3.3.2 Details of Subsidiary Company/Joint (To be filled at page to _ of
Venture Company registered by the this Attachment)
Associate in India meeting requirement of
Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS

3.3.3 *Name, Address, email, Fax, Tel. No.
of the Subsidiary meeting the QR
for QSGM as per clause 1.1.0 of BDS

3.3.4 *Name, address & Telephone No., Fax
and e-mail of subsidiary company
owning the technology for
supercritical steam generators

*We have submitted the experience details in support of Qualifying Requirement at 3.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 3.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (Qualified Steam Generator Manufacturer) and above subsidiaries.

TO BE FILLED IN BY THE BIDDER WHOSE ASSOCIATE IS SEEKING QUALIFICATION AS PER CLAUSE 1.1.1(A), ITEM 4 OF BDS READ IN CONJUNCTION WITH NOTE 5 TO CLAUSE 1.0.0, ITEM 4 OF BDS (I.E. IF THE ANSWER TO SUB-CLAUSE 2.06.00(iii) TO CLAUSE 3.1.0 ABOVE IS "NO")

3.4.0 We, confirm that M/s _____(supercritical Steam Generator Manufacturer) meets all the requirement as per 1.1.1(A), Item 4 of BDS except that the evaporator indicated in the reference steam generator is not designed for variable pressure operation and is designed for constant pressure (Universal Pressure) operation only, and is seeking qualification along with the original technology owner (Licensor) with whom he has an ongoing license agreement (which covers technology transfer), as on the date of Techno-Commercial bid opening, for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges).

Further, we confirm that original technology owner (Licensor) has experience of providing variable pressure design steam generator technology for at least one (1) no. of pulverised coal fired supercritical steam generator for a 1500 T/hr or higher capacity using either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing with the evaporator suitable for variable pressure operation in sub-critical and super-critical pressure ranges and which is/are in successful operation for a period of not less than one (1) year prior to the date of **Techno-Commercial** bid opening.

We further confirm that we have offered only the type of steam generator i.e. single pass (tower type) or two pass type for which we are qualified and have offered only the type or water wall tubing (either spiral wound (inclined) or vertical plain or vertical rifled type) for which our licensor is qualified. The details of Licensor and his experience details are as follows:-

I. Details of Technology Owner (Licensor)

1.01.00 Name of the original technology owner (Licensor)

1.02.00 Address, Email ID & Tel No. & Fax

1.03.00 Name and Designation of the Responsible person in the Organization

1.04.00 Licensing agreement for max. Capacity rating of Steam Generator (in MW)

1.05.00 Date of Start of Licensing agreement

1.06.00 Date of End of Licensing agreement

1.07.00 Whether Scope of licensing agreement covers for design, manufacture, sell, use, service of once through variable pressure

*Yes/*No

supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges).

1.08.00 Copy of relevant portion of Licensing agreement attached at Annexure.....

Sl. No.	Item Description	Station-1	Station-2	Station-3

II. Details of experience of Technology Owner (Licensor)

1.01.00 Name of the reference station and its location

1.02.00 Client name and its address, Fax No. & Tel.No., email ID

1.03.00 Actual date of completion/ date of commencement of Successful operation

1.04.00	Whether the Plant is in Successful operation	*Yes/*No	*Yes/*No	*Yes/*No

1.05.00 Scope of work executed for the aforesaid Steam Generator includes the following:

i)	Designed	Yes*/No*	Yes*/No*	Yes*/No*

ii)	Engineered	Yes*/No*	Yes*/No*	Yes*/No*

iii)	Whether the plant is in successful operation for a period of one (1) year (Minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*	Yes*/No*

1.06.00	i) Supercritical Steam Generator ii) Steam Generator steam flow capacity at Superheater Outlet (T/Hr.)	Yes*/No*	Yes*/No*	Yes*/No*

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.07.00	Type of Steam Generator			
	i) Single pass (tower type) or two pass type (must match with offered type)			
	i) Once through type	Yes*/No*	Yes*/No*	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*
1.08.00	Type of Water wall tubes (Spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)			
1.09.00	Type of firing (Coal)	Yes*/No*	Yes*/No*	Yes*/No*
1.10.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
1.11.00	Undertaking w.r.t Deed of Joint Undertaking (DJU) as per performa enclosed at attachment-3I of Book 1 of 3, Sec-VII (Forms & Procedures) is furnished along with the bid at Annexure			

3.5.0* We confirm that our Associate i.e. M/s have manufactured / supplied in India Eight (8) Nos. supercritical Steam Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 of Item no. 4 of BDS. Further, we confirm that we shall offer only the type of steam generator for which our associate is qualified.

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

1.00.00 Name and location of the reference
Station in which the unit is located

1.1.0 Name, address, email, Tel. no.
and Fax of owner of the station

1.1.1 Name and Designation of the
responsible person in owner's
organisation

1.1.2 Capacity of Steam Generator
Unit in MW

1.1.3 Contract No. & Date

1.1.4 Starting date of project

1.1.5 Scheduled date of Commissioning

1.1.6 Actual date of Commissioning

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.1.7	Date of commencement of successful operation	
1.1.8	Date of commencement of Commercial operation (COD)	
1.1.9	Whether the Steam Generator is supercritical	Yes*/No*
1.1.10	Scope of work executed by associate:	
	a) Manufactured	Yes*/No*
	b) Supplied	Yes*/No*
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No*
1.2.0	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set has successfully completed Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*

Details of Steam Generator

2.00.00 Name and Address of Steam Generator Set manufacturer

2.01.00 Steam Generator steam flow capacity at SH outlet (T/Hr.)

2.02.00 Main Steam Temperature at SH outlet (°C)

2.03.00 Main Steam Pressure at SH outlet [kg/cm²/(a)]

2.04.00 Reheat steam flow (T/Hr.)

2.05.00 a) Reheater outlet pressure [kg/cm² (a)]

b) Reheater outlet temperature (°C)

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.06.00	Whether balanced draft type or not	
2.7.0	Type of Steam Generator	
	i) Single pass (tower type) or two pass type (must match with offered type)	
	ii) Once through type	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*
2.08.00	Type of circulation system (Natural or Forced Circulation)	
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)	
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m ²)	
2.11.0	Type of coal used	
	i) Max. HHV (Kcal/Kg)	
	ii) Min. HHV (Kcal/Kg)	
	iii) Max. Ash content (%)	
	iv) Max. total moisture content (%)	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	v) Volatile matter content (%)	
2.11.1	Type of oil used	
	i) HHV (Kcal/Kg)	
	ii) Sulphur content (%)	
	iii) Viscosity in centistoke at 50°C (Max.°C)	
	iv) Pour point (°C)	
	v) Flash point (°C)	
2.12.0	Fuel (other than pulverised coal fired)	
2.12.1	Type of fuel used	
2.12.2	Firing rate	
2.12.3	Calorific value of fuel (Kcal/kg)	
2.13.00	Designed Boiler efficiency and corresponding GCV	
2.14.00	Tested boiler efficiency and corresponding GCV	
2.15.00	Tested boiler efficiency corrected to design conditions and corresponding GCV	
2.16.00	a) Whether used for two shifting	
	b) If yes, number of such operations it has been designed for	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
	c) No. of actual two shifting cycles it has actually operated on till date	
2.17.0	Minimum start-up time achieved	
	i) Cold (after 72 hrs. of unit shut down)	
	ii) Warm (after 36 hrs. of unit shut down)	
	iii) Hot (after 8 hrs. of unit shut down)	
2.18.00	Availabilities of steam generator for last two years	
2.19.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators	
3.00.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	

#3.7.0 Undertaking w.r.t Deed(s) of Joint Undertaking (DJU) executed by us, our Associate, our Associate's*QSGM / Indian *Subsidiary Company / *JV Company (as the case may be), Other Promoter having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (as the case may be), *subsidiaries of Holding Company (the Associate) and *the manufacturing subsidiary Company, *Technology Owner (Licensor) of supercritical steam generator, *"Indian Subsidiary Company / JV Company / Indian Manufacturing Company (as per 1.6.1 of item 4 of BDS)" as per clause 1.7.3 and/or applicable Notes for clause no. 1.0.0 of Item No. 4 of BDS is enclosed at Annexure.....to this Attachment.

3.8.0 Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of clause 1.6.1 and/or Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.

* Bidder to strike whichever is not applicable
Bidder to strike whichever is not applicable

Date:
Place:

(Signature).....
(Printed Name).....
(Designation).....
(Common seal).....

4.0.0 We are associating with M/s(*Qualified Steam Turbine Generator Manufacturer / Indian *Subsidiary of QSTGM / *JV Company of QSTGM) and shall source the Steam Turbine Generator Set from M/s (Associate) as per clause 1.7.2(ii) item no. 4 of BDS. The details are as follows:

4.1.0 We confirm that the QSTGM have designed, engineered, *manufactured / *got manufactured, *erected / *supervised erection, *commissioned / *supervised commissioning of (i) at least one (1) number supercritical steam turbine of tandem compound, condensing, reheat type of 500 MW or above capacity with main steam pressure of 225 Kg/cm² (gauge) or higher and main steam / reheat temperature of 565° C / 565° C or higher and (ii) at least one (1) number of generator of two pole, Thermal class 155 (F) winding insulation, hydrogen / water cooled stator and hydrogen / water cooled rotor of 500 MW or above capacity. These steam turbine and generator are in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening. The details are as follows :-

S No.	Item Description	For Stean Turbine	For Generator (if
		----- Station-1, 2, 3	separate station) ----- Station-1, 2, 3

1.00.00	Name, address, e-mail, Tel. No. and Fax No. of the QSTGM
1.01.00	Name and Designation of the responsible person in QSTGM
1.1.0	Name of the reference station and its location
1.1.1	Name, address, Fax No., e-mail and Tel. No. of Owner of the reference station
1.1.2	Name, address, Fax No., e-mail and Tel. No. of intermediary organisation in case the award has been recieved by QSTGM from intermediary organisation

S No.	Item Description	For Stean Turbine	For Generator (if separate station)
		----- Station-1, 2, 3	----- Station-1, 2, 3
1.02.00	Name and Designation of the responsible person in Owner's organisation		
1.02.01	Name and Designation of the responsible person in intermediary organisation		
1.03.00	No. of Steam Turbine Generator Sets supplied by QSTGM for the station		
1.04.00	Contract No. and Date		
1.05.00	Capacity in MW of Unit		
1.06.00	Starting date of project		
1.07.00	Scheduled date of commissioning		
1.08.00	Actual date of commissioning		
1.09.00	Date of commencement of successful operation		
1.10.00	Scope of work executed by QSTGM for the aforesaid Steam Turbine Generator Set includes the following:		
	(a) Designed	*Yes/*No	*Yes/*No
	(b) Engineered	*Yes/*No	*Yes/*No
	(c) *Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No

S No.	Item Description	For Stean Turbine ----- Station-1, 2, 3	For Generator (if separate station) ----- Station-1, 2, 3
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No
(e)	*Commissioned/*Super vised Commissioning/ **Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No
f)	Whether the plant is in successful operation for a period of one (1) year (minimum) prior to date of Techno-Commercial bid opening	Yes*/No*	Yes*/No*

(**In case the QSTGM has acted as advisor for erection / commissioning of reference Steam Turbine & Generator, Bidder shall furnish necessary documents / certificate from client in support of such activity and enclose the same at Annexure.... to this Attachment, pursuant to Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS)

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3

2.00.00 Details of Turbine

2.01.00 Steam Turbine make

2.02.00	Tandem compound	*Yes/*No	*Yes/*No	*Yes/*No

2.03.00 No. of Reheat

2.4.0 (i) No. of Cylinders:

(a) HP

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	(b) IP			
	(c) Combined HP-IP			
	(d) LP			
	(ii) Whether HP and IP cylinders are combined or separate			
2.5.0	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP turbine (if applicable)			
	(d) LP Turbine			
2.06.00	Main steam pressure (gauge)			
2.07.00	Main steam temperature (deg.C)			
2.08.00	Reheat Steam temperature (deg.C)			
2.09.00	Condensing type	*Yes/*No	*Yes/*No	*Yes/*No
2.10.00	Rated speed (RPM) and operating frequency range (Hz)			
2.11.00	No. of Steam Extractions			
2.12.00	Steam Turbine and Generator Directly coupled	*Yes/*No	*Yes/*No	*Yes/*No

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.13.00	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.00.00	Generator Details			
3.01.00	Generator make and model No.			
3.02.00	Rated MVA			
3.03.00	Rated Power Factor			
3.04.00	MW rating			
3.05.00	Rated voltage (kV)			
3.06.00	No. of phases			
3.07.00	No. of poles			
3.08.00	Mounting	* Hori- zontally/ *Vertical	* Hori- zontally/ *Vertical	* Hori- zontally/ *Vertical
3.09.00	Installation	* Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
3.10.00	Cylindrical rotor type	*Yes/*No	*Yes/*No	*Yes/*No
3.11.00	Cooling medium			
	(a) Stator			
	(b) Rotor			
3.12.0	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
3.13.00	Schedule date of Commissioning			
3.14.00	Actual date of commissioning			
3.15.00	Date of commencement of successful operation			
4.0.0	Certificate(s) from the Owner of the reference Plant that the aforesaid Steam Turbine *Generator Set (as applicable) is in successful operation for a period of not less than one (1) year prior to date of Techno- Commercial Bid Opening is furnished at Annexure..... to this Attachment			
4.01.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			
4.02.00	Documentary evidence in case the award for reference work (steam turbine generator set) has been received by Associate (*QSTGM / Indian *Subsidiary / *JV Company of QSTGM) from Owner of plant or any other intermediary organization			
(i)	Certificate from *Owner of the plant or *intermediary organisation to be furnished by Bidder on behalf of its Associate in support of the claim of meeting requirement at clause 1.1.0 item 4 of BDS as the case may be, enclosed at Annexure..... to this Attachment			
(ii)	Certificate from *Owner of the plant to be furnished by Bidder on behalf of its Associate for the successful operation of the Steam Turbine Generator Set as specified at requirement stipulated at clause 1.1.0, item 4			

of BDS, as the case may be,
enclosed at Annexure.... to this Attachment

4.2.0 *(a) We confirm that *our Associate, a QSTGM, have registered an Indian Subsidiary Company M/s..... / *our Associate is an Indian Subsidiary Company of M/s (QSTGM) registered in India, as per Companies Act of India, for manufacturing **supercritical steam turbine generator sets** covering the type, size and rating specified. Further the Indian Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial bid opening (Applicable in case the Indian Subsidiary Company is registered as a public limited Company).

We confirm that M/s is a subsidiary company of M/s..... (QSTGM) and shall remain a subsidiary company of the QSTGM for a minimum period of 7 years from the date of incorporation of this Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

*We confirm that the QSTGM meets the requirement of clause 1.1.1(B) of Item No. 4.0 of BDS **except for Generator** and accordingly, the Indian Subsidiary Company have associated and have a technology transfer agreement with M/s..... (**Qualified Generator Manufacturer**) who meets the the requirement in respect of generator as per clause 1.1.4 of Item No. 4.0 of BDS. M/s..... (Qualified Generator Manufacturer) have minimum 10% equity participation and shall continue to maintain equity participation of minimum 10% in the said Indian Subsidiary Company for a lock in period of 7 years from the date of incorporation of this Indian Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

The details of Indian Subsidiary Company are as follows :

- 1.00.00 Date of Incorporation of Indian Subsidiary Company
- 1.01.00 Equity participation of Qualified Steam Turbine Generator* manufacturer in the subsidiary company (In percentage of the total equity)
- 1.02.00 Lock in period for above equity participation from the date of incorporation (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for QSTGM's equity participation in the Indian Subsidiary Company along with lock in

period of such equity in compliance to clause 1.1.2(a)/1.3.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM)

2.00.00 *Equity participation of other Promoter having Equity more than 25% in Indian Subsidiary Company

2.01.00 *Lock in period for above equity participation from the date of incorporation.

3.00.00 *Equity participation of Qualified Generator manufacturer, in the Indian Subsidiary company.

3.01.00 *Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian subsidiary company or upto the end of defect liability period of the contract whichever is later?
(Qualified Generator manufacturer to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for their equity participation in the Indian Subsidiary Company along with lock in period of such equity in compliance to clause 1.1.4 of Item No. 4.0 of BDS supported by Board Resolution of the Qualified Generator manufacturer)

*Yes/*No

4.00.00 Certificate for commencement of Business in India (if applicable) is enclosed at Annexure_____ of this Attachment

4.01.00 Copy of Certificate of Incorporation and Memorandum of Association of Indian subsidiary company is enclosed at Annexure_____of this Attachment

4.2.0 *(b) We confirm that *our Associate, a QSTGM, have registered a Joint Venture (JV) Company M/s..... / *our Associate is a Joint Venture Company registered in India, as per Companies Act of India, for manufacturing **supercritical steam turbine generator set** covering the type, size and rating specified. The Joint Venture (JV) Company is promoted by (i) M/s....., an Indian Company registered in India under the Companies Act of India and (ii) M/s....., a **QSTGM**, who meets the requirement as per the details furnished in clause 1.1.0 above.

The JV Company have obtained certificate for commencement of Business in India as on the date of Techno-Commercial bid opening, (Applicable in case, the JV Company is incorporated as a public limited Company).

We further confirm that the QSTGM have minimum 26% equity participation and shall continue to maintain equity participation of minimum 26% in the JV Company for a lock-in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

Further M/s....., one of the promoters is a majority stakeholder who have minimum 51% equity participation and shall continue to maintain a minimum equity participation of 51% in the JV Company for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of the defect liability period of the contract whichever is later.

*We further confirm that the QSTGM meets the requirement of clause 1.1.1(B) of Item No. 4.0 of BDS except for Generator and accordingly, the JV Company have associated and have a technology transfer agreement with M/s.....(**Qualified Generator Manufacturer**) who meets the the requirement in respect of generator as per clause 1.1.4 of Item No. 4.0 of BDS. M/s..... (Qualified Generator Manufacturer) have minimum 10% equity participation and shall continue to maintain equity participation of minimum 10% in the JV Company for a lock in period of 7 years from the date of incorporation of this JV Company or up to the end of the defect liability period of the contract whichever is later.

The details of the Joint Venture (JV) company are as follows :

- 1.00.00 Date of Incorporation of JV Company
- 1.01.00 Equity participation of **Qualified Steam Turbine Generator*** manufacturer in the JV company (In percentage of the total equity)
- 1.02.00 Lock in period for above equity participation from the date of incorporation

(Bidder to furnish a letter of

undertaking as per format enclosed at Attachment 3A11 for QSTGM's equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the QSTGM)

2.00.00 Equity participation of the Majority Stake Holder having Equity more than 51% in JV Company

2.01.00 Lock in period for above equity participation from the date of incorporation

(Majority Stake Holder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for their equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.2(b)/1.4.1(a) of item 4 of BDS supported by Board Resolution of the Majority Stake Holder)

3.00.00 *Equity participation of Qualified Generator manufacturer in the JV Company

3.01.00 *Whether Lock-in period for above equity participation is seven years from the date of incorporation of Indian JV company or upto the end of defect liability period of the contract whichever is later?

*Yes/*No

(Qualified Generator Manufacturer to furnish a letter of undertaking as per format enclosed at Attachment 3A-11 for their equity participation in the JV Company along with lock in period of such equity in compliance to clause 1.1.4 of Item No. 4.0 of BDS supported by Board Resolution of the Qualified Generator Manufacturer)

- 4.00.00 Certificate for commencement of Business in India (if applicable) is enclosed at Annexure _____ of this Attachment
- 4.01.00 Copy of Certificate of Incorporation and Memorandum of Association of JV company is enclosed at Annexure _____ of this Attachment
-

4.2.0**(b)(i) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate) is an entity other than the QSTGM and is an Indian Company and has executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening. The details are as follows :

*Bidder to furnish 4.2.0**(b)(i) & (ii) only when his Associate is a JV Company of QSTGM, as per clause 1.4.1(a), Item No. 4 of BDS.*

S.No.	Item Description	Project#1	Project#2	Project#3
1.00	Name of the reference station & its Location			
1.01	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.02	Name and designation of the responsible person in Owner's organisation			
1.03	Contract No. & date			
1.04	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.05	Starting date of Project			
1.06	Scheduled date of Commissioning			
1.07	Actual date of Commissioning			
1.08	Date of Commencement of successful Operation			
1.09	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			

S.No.	Item Description	Project#1	Project#2	Project#3
1.12	Necessary documentary evidence is support of above are attached at Annexure..... of this Attachment			

4.2.0**(b)(ii) We, on behalf of our Associate, confirm that M/s....., the majority stake holder in the said JV Company (i.e. the Associate), an entity other than the QSTGM are an Indian Company. Our Associate's **Parent Company** M/s have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4,000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening.

We, on behalf of our Associate, confirm that our Associate is a wholly owned subsidiary of thier Parent Company M/s..... who have 100% equity and shall continue to maintain equity participation of 100% in the Associate (wholly owned subsidiary company) for a lock in period of 7 years from the date of incorporation of the JV company or upto the end of defect liability period of the contract whichever is later.

The qualification details of the Parent Company are as follows :

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, Fax No., Tel. No. and e-mail			
1.2	Name and designation of the responsible person in Owner's organisation			

4.2.0**(b)(ii) is to be filled in only in pursuance of Note No. 6 of cl. no. 1.1.0 of Item no. 4 of BDS.

S.No.	Item Description	Project#1	Project#2	Project#3
1.03	Contract No. & date			
1.04	(i) Nature/area of EPC Project			
	(ii) Whether Civil Works included in the scope	*Yes/*No	*Yes/*No	*Yes/*No
1.05	Starting date of Project			
1.06	Scheduled date of Commissioning			
1.07	Actual date of Commissioning			
1.08	Date of Commencement of successful Operation			
1.09	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Certificate from the Owner(s) that the aforesaid projects are in successful operation for a period not less than one (1) year prior to date of Techno-Commercial Bid opening			
1.11	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			
1.12	Date of Incorporation of JV Company			

S.No.	Item Description	Project#1	Project#2	Project#3
1.13	Equity participation of Parent Company in the wholly owned subsidiary company (in percentage of the total equity)			
1.14	Whether Lock-in period for above equity participation is seven years from the date of incorporation of JV company or upto the end of defect liability period of the contract whichever is later? (Bidder to furnish a letter of undertaking as per format enclosed at Attachment 3A11 for equity participation of Parent Company in the wholly owned subsidiary company along with lock in period of such equity in compliance to note 6 for clause 1.0.0 of Item No. 4.0 of BDS supported by Board Resolution of the Parent Company)	*Yes/*No	*Yes/*No	*Yes/*No

4.2.0*(c) We confirm that M/s our Associate (an Indian *Subsidiary / *JV Company) / our Associate's *Indian subsidiary / *JV Company, whose details are indicated at *4.2.0(a) / *4.2.0(b) above, have registered **another Indian manufacturing Subsidiary Company** M/s....., as per Companies Act of India for manufacturing **supercritical steam turbine generator sets** in India covering the type, size and rating specified. This manufacturing Subsidiary Company has obtained certificate for Commencement of Business in India as on the date of Techno-Commercial Bid Opening(Applicable in case the Indian manufacturing Subsidiary Company is registered as a public limited Company).

We confirm that M/s....., the manufacturing company, shall remain a subsidiary of the Indian Subsidiary / JV Company with equity lock in for a minimum lock in period of 7 years from the date of incorporation of this Indian manufacturing Subsidiary Company or up to the end of the defect liability period of the contract whichever is later.

4.2.0*(c) is to be filled in only in pursuance of Note 8 for clause.no. 1.0.0 of Item 4 of BDS.

The details of Indian manufacturing Subsidiary Company are as follows :

1.00.00 Date of Incorporation of Indian
Manufacturing Subsidiary Company

1.01.00 Equity participation of the *Indian
Subsidiary / *JV company
in the Indian Manufacturing
Subsidiary Company
(in percentage of the total equity)

1.02.00 Whether Lock-in period for above
equity participation is seven years
from the date of incorporation of
Indian manufacturing subsidiary
company or upto the end of
defect liability period of the contract
whichever is later ? *Yes/*No

(Bidder to furnish a letter of under-
taking as per format enclose at
Attachment 3A11 for the above
equity participation in the Indian
manufacturing Subsidiary Company
along with lock in period of such
equity in compliance to note 8 for
clause 1.0.0 of Item No. 4.0 of
BDS supported by Board Resolution
of the *Indian subsidiary/*JV company)

2.00.00 Certificate for commencement of
Business in India (if applicable)
is enclosed at Annexure _____
of this Attachment

2.01.00 Copy of Certificate of Incorporation
and Article of Association and Memo-
randum of Association of Indian
manufacturing subsidiary company
is enclosed at Annexure _____ of
this Attachment

4.3.0** We confirm that M/s....., **a super critical steam turbine manufacturer** meets the requirements of clause 1.1.1(B) **except for generator**. Hence, as per clause 1.7.4 of item no. 4.0 of BDS, the Subsidiary Company / JV Company (as the case may be) have associated with and have a Technology Transfer agreement with M/s....., (Qualified Generator Manufacturer) meeting the requirements of clause 1.7.4 of item no. 4.0 of BDS fully in respect of generator. The details are as follows :-

The Qualified Generator Manufacturer have minimum 10% equity participation and shall continue to maintain a minimum equity participation of 10% in the Indian Subsidiary / JV Company (as the case may be), for a lock-in period of 7 years from the date of incorporation of the Indian Subsidiary / JV Company (as the case may be) or up to the end of defect liability period of the contract whichever is later.

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.00.00	Name of the reference station and its location			
1.1.0	Name, address, email, Fax No. and Tel. No. of Owner of Plant			
1.1.1	Name, address, email, Fax No. and Tel. No. of intermediary organisation in case the award has been recieved by Qualified Generator Manufacturer from intermediary organisation			
1.2.0	Name and Designation of the responsible person in Owner's organisation			
1.2.1	Name and Designation of the responsible person in intermediary organisation.			
1.03.00	No. of Generator Sets supplied			
1.04.00	Contract No. and Date			
1.05.00	Capacity in MW of Unit			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.06.00	Starting date of project			
1.07.00	Scheduled date of completion			
1.08.00	Actual date of completion			
1.09.00	Date of commencement of successful operation			
1.10.00	Scope of work for the aforesaid Generator Set includes the following:			
(a)	Designed	*Yes/*No	*Yes/*No	*Yes/*No
(b)	Engineered	*Yes/*No	*Yes/*No	*Yes/*No
(c)	*Manufactured / *Got Manufactured	*Yes/*No	*Yes/*No	*Yes/*No
(d)	*Erected/*Supervised Erection/**Acted as an Advisor for Erection	*Yes/*No	*Yes/*No	*Yes/*No
(e)	*Commissioned/*Supervised Commissioning/**Acted as an Advisor for Commissioning	*Yes/*No	*Yes/*No	*Yes/*No

** Necessary Documents /Certificate from the client, in support of Note No. 2 for Clause no. 1.0.0 of Item No. 4.0 of BDS are Attached at Annexure..... of this Attachment.

1.2.0 Details of Generator

1.2.1 Generator make and
model No.

1.2.2 Rated MVA

1.2.3 Rated Power Factor

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.02.04	MW rating			
1.02.05	Rated voltage (kV)			
1.02.06	No. of phases			
1.02.07	No. of poles			
1.02.08	Mounting	*Hori- zontal/ *Vertical	*Hori- zontal/ *Vertical	*Hori- zontal/ *Vertical
1.02.09	Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
1.02.10	Cylindrical rotor Type	*Yes/*No	*Yes/*No	*Yes/*No
1.02.11	Cooling medium			
	(a) Stator			
	(b) Rotor			
1.2.12	Thermal class of Insulation			
	(a) Stator			
	(b) Rotor			
1.2.13	Date of Commissioning			
1.2.14	Date of Commencement of successful operation			
2.00.00	Certificate(s) from the Owner that the aforesaid Generator Set is in successful operation for a period of not less than one (1) year prior to date of Techno-Commercial Bid Opening is furnished at Annexure..... to this Attachment			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3

3.00.00 Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment

4.4.0 *We confirm that M/s....., (Associate) is seeking qualification as holding company (singularly or collectively) with their subsidiaries (held directly or indirectly) as per notes No. 4 for clause no. 1.0.0, Item No. 4 of BDS. Further, the details of the subsidiaries meeting the QR are as follows :

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3

4.4.1 Associate and their Subsidiary's(ies') Experience details in respect of the meeting requirement for **QSTGM (as per clause 1.1.1(B))**, item 4 of BDS (To be filled at page to of this Attachment)

4.4.2 Details of Subsidiary Company/Joint Venture Company registered by the Associate in India meeting requirement of Clause 1.1.2(a) or 1.1.2(b), item 4 of BDS (To be filled at page to of this Attachment)

4.4.3 a) *Name, Address, email, Fax, Tel. No. of the Subsidiary meeting the QR for supercritical Steam Turbine Manufacturer as per clause 1.1.0 of BDS

b) *Name, Address, email, Fax, Tel. No. of the Subsidiary meeting the QR for Generator Manufacturer as per clause 1.1.0 of BDS

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3

- 4.4.4 a) *Name, address, Telephone No.,
Fax and e-mail of subsidiary company
owning the technology for
supercritical steam turbine
- b) *Name, address, Telephone No.,
Fax and e-mail of subsidiary company
owning the technology for
generator

*We have submitted the experience details in support of Qualifying Requirement at 4.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between our Associate and above subsidiaries.

*We have submitted the experience details in support of Qualifying Requirement at 4.1.0 above with reference to above subsidiary(ies). We are attaching the necessary documentary evidence as Annexure..... of this Attachment establishing the relationship between M/s....., (**Qualified Steam Turbine Generator Manufacturer**) and above subsidiaries.

4.5.0* We confirm that our Associate i.e. M/s have manufactured / supplied in India Eight (8) Nos. supercritical Steam Turbine Generators, which are in commercial operation (achieved COD) out of which four (4) such Steam Turbine Generators are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Turbine Generators prior to the date of techno-commercial bid opening, as per clause 1.6.1 (a) of Item no. 4 of BDS. Further, we confirm that we shall offer only the type of steam Turbine generator for which our associate is qualified.

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.00.00	Name and location of the reference Station in which the unit is located	
1.1.0	Name, address, email, Tel. no. and Fax of owner of the station	
1.1.1	Name and Designation of the responsible person in owner's organisation	
1.1.2	Capacity of Steam Turbine Generator Unit in MW	
1.1.3	Contract No. & Date	
1.1.4	Starting date of project	
1.1.5	Scheduled date of Commissioning	
1.1.6	Actual date of Commissioning	
1.1.7	Date of commencement of successful operation	
1.1.8	Date of commencement of Commercial operation (COD)	
1.1.9	Whether the Steam Turbine Generator is supercritical	Yes*/No*
1.1.10	Scope of work executed by associate:	
	a) Manufactured	Yes*/No*
	b) Supplied	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
1.1.11	Whether Performance Guarantee Test Successfully completed	Yes*/No*
1.2.0	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation (achieved COD) prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.1	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation for at least one (1) year prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set has successfully completed Performance Guarantee Tests prior to the date of opening of Techno-Commercial Bid. (enclosed at Annexure-.....)	Yes*/No*
1.2.3	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment	

2.00.00 Details of Turbine

2.01.00 Steam Turbine make

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.02.00	Tandem compound	Yes*/No*
2.03.00	No. of Reheat	
2.4.0	(i) No. of Cylinders:	
	(a) HP	
	(b) IP	
	(c) Combined HP-IP	
	(d) LP	
	(ii) Whether HP and IP cylinders are combined or separate	
2.5.0	Module Number	
	(a) HP Turbine	
	(b) IP Turbine	
	(c) Combined HP-IP turbine (if applicable)	
	(d) LP Turbine	
2.06.00	Main steam pressure (gauge)	
2.07.00	Main steam temperature (deg.C)	
2.08.00	Reheat Steam temperature (deg.C)	

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8
2.09.00	Condensing type	Yes*/No*
2.10.00	Rated speed (RPM) and operating frequency range (Hz)	
2.11.00	No. of Steam Extractions	
2.12.00	Steam Turbine and Generator Directly coupled	Yes*/No*
2.13.00	Steam Turbine Generator Set Installation (Indoor / Outdoor)	
3.00.00	Generator Details	
3.01.00	Generator make and model No.	
3.02.00	Rated MVA	
3.03.00	Rated Power Factor	
3.04.00	MW rating	
3.05.00	Rated voltage (kV)	
3.06.00	No. of phases	
3.07.00	No. of poles	
3.08.00	Mounting (Horizontal / Vertical)	
3.09.00	Installation (Indoor / Outdoor)	
3.10.00	Cylindrical rotor type	Yes*/No*

Sl. No.	Item Description	Unit- 1, 2, 3, 4, 5, 6, 7, 8

3.11.0 Cooling medium

(a) Stator

(b) Rotor

3.12.0 Thermal Class of insulation

(a) Stator

(b) Rotor

3.13.00 Schedule date of Commissioning

3.14.00 Actual date of commissioning

3.15.00 Date of commencement
of successful operation

4.00.00 Documentary evidence in support
of QR data is enclosed at
Annexure..... to this Attachment

#4.6.0 Undertaking w.r.t Deed(s) of Joint Undertaking (DJU) executed by us, our Associate, PMO (other than the Bidder), our / our Associate's *QSTGM / Indian *Subsidiary / *JV Company (as the case may be), Other Promoter having 25% or higher Equity Participation in the *Subsidiary Company / *JV Company (as the case may be), *Qualified Generator Manufacturer, *subsidiaries of Holding Company, *the Indian Manufacturing Subsidiary Company and "Indian Subsidiary Company / JV Company / Indian Manufacturing Company (as per 1.6.1 of item 4 of BDS)" as per clause 1.7.3 and/or 1.7.4 and/or Applicable notes for clause no. 1.0.0 of Item No. 4 of BDS, is enclosed at Annexure to this Attachment.

#4.7.0 Letter to ensure satisfactory performance of Steam Generators and/or Steam Turbine Generators (as the case may be) & Auxiliaries as per requirements of clause 1.6.1 and/or Note No. 13 for clause no. 1.0.0 of Item No. 4 of BDS as per the format enclosed in the bidding documents (Sec VII Part 3 of 3) is enclosed at Annexure to this Attachment.

* Bidder to strike whichever is not applicable

Bidder to strike whichever is not applicable

Date :
Place :

(Signature).....
(Printed Name).....
(Designation).....
(Common seal).....

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS(2X800 MW)/EPC/IPHB**

**(Project Management Experience as per Clause 4.0.0,
Item No. 4.0 of BDS, to be filled by all the Bidders)**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

1.0.0 *We, M/s..... (Bidder), confirm that we have executed, in the last 10 years, industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry with the total value of such projects being INR 10,000 million or more. At least one of such projects has a contract value of INR 4,000 million or more. These projects are in successful operation for a period of not less than one year prior to the date of Techno-Commercial bid opening, as per clause 4.1.0(a), Item No. 4 of BDS. The details are as follows:

S.No.	Item Description	Project#1	Project#2	Project#3
1.0	Name of the reference station & its Location			
1.1	Owner's Name and its address, email, Fax No. and Tel. No.			
1.2	Name and designation of the responsible person in Owner's organisation			
1.3	Contract No. & date			
1.4	i) Nature/area of EPC Project			
	ii) Whether Civil Works included in scope	*Yes/*No	*Yes/*No	*Yes/*No
1.5	Starting date of Project			

S.No.	Item Description	Project#1	Project#2	Project#3
1.6	Scheduled date of Commissioning			
1.7	Actual date of Commissioning			
1.8	Date of Commencement of Successful Operation			
1.9	Value of above projects (in INR Million)			
1.10	Scope of work executed			
	(a) Engineering	*Yes/*No	*Yes/*No	*Yes/*No
	(b) Procurement	*Yes/*No	*Yes/*No	*Yes/*No
	(c) Construction	*Yes/*No	*Yes/*No	*Yes/*No
1.11	Total value of industrial projects on EPC basis (with or without civil works) in the area of power, steel, oil & gas, petro-chemical, fertilizer and / or any other process industry	INR.....	Million	
1.12	Certificate from the Owner(s) that the aforesaid plants are in successful operation for a period not less than one (1) year prior to the date of Techno-Commercial Bid opening			
1.13	Necessary documentary evidence in support of above are attached at Annexure..... of this Attachment			

2.0.0 * We, M/s..... (Bidder), confirm that we have executed at least one (1) no. of coal / lignite fired reheat type of unit of at least 200 MW which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening, as per clause no. 4.1.0(b), Item no. 4 of BDS.

*We do not meet the requirements mentioned at Clause 4.1.0(b), item 4 of BDS. We are associating with M/s....., a Project Management Organisation (PMO), who have carried out Project Management work of at least one (1) no. of coal / lignite fired reheat type of unit of at least 200MW which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Comemrcial bid opening, as per clause 4.1.0(b), Item no. 4 of BDS.

The qualification details of *Us/ *our PMO are furnished as below :

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.00.00	Name, address, Tel. No., Fax No. and email of the Project Management Organisation (PMO)			
1.01.00	Name and Designation of the responsible person in the PMO			
1.2.0	Name of the reference station and its location			
1.2.1	Name, address, email, Tel. no. and Fax of owner of the station			
1.2.2	Name and Designation of the responsible person in owner's organisation			
1.2.3	No. of units & Capacity of each unit in MW			
1.2.4	Contract No. & Date			

Sl. No.	Item Description	Station-1	Station-2	Station-3
1.02.05	Starting date of project			
1.02.06	Scheduled date of Commissioning			
1.02.07	Actual date of Commissioning			
1.02.08	Date of commencement of successful operation			
1.02.09	Whether the Plant is coal fired or lignite fired	*Yes/*No	*Yes/*No	*Yes/*No
1.02.10	Whether the plant is reheat type	*Yes/*No	*Yes/*No	*Yes/*No
1.02.11	Scope of work executed by *us / *PMO as detailed below :			
	a) Engineering management	Yes*/No*	*Yes/*No	*Yes/*No
	b) Procurement management	Yes*/No*	*Yes/*No	*Yes/*No
	c) Construction management	Yes*/No*	*Yes/*No	*Yes/*No
	d) *Commissioning / *Supervision of Commissioning	Yes*/No*	*Yes/*No	*Yes/*No
1.02.12	Whether the scope of work included :			
	i) Steam Generator sets along with their associated auxiliaries	Yes*/No*	*Yes/*No	*Yes/*No
	ii) Steam Turbine Generator sets along with their associated auxiliaries	Yes*/No*	*Yes/*No	*Yes/*No
	iii) Electrostatic Precipitators / Bag filters	Yes*/No*	*Yes/*No	*Yes/*No
	iv) Switchyard	Yes*/No*	*Yes/*No	*Yes/*No

Sl. No.	Item Description	Station-1	Station-2	Station-3
v)	Coal Handling Plant	Yes*/No*	*Yes/*No	*Yes/*No
vi)	Ash Handling Plant	Yes*/No*	*Yes/*No	*Yes/*No
vii)	Cooling Towers	Yes*/No*	*Yes/*No	*Yes/*No
vi)	Condenser Cooling Water System	Yes*/No*	*Yes/*No	*Yes/*No
Details of Steam Generator				
2.00.00	Name and Address of Steam Generator Set manufacturer			
2.01.00	Steam Generator steam flow capacity at SH outlet (T/Hr.)			
2.02.00	Main Steam Temperature at SH outlet (°C)			
2.03.00	Main Steam Pressure at SH outlet [kg/cm ² /(a)]			
2.04.00	Reheat steam flow (T/Hr.)			
2.05.00	a) Reheater outlet pressure [kg/cm ² (a)]			
	b) Reheater outlet temperature (°C)			
2.06.00	Whether balanced draft type or not	Yes*/No*	*Yes/*No	*Yes/*No
2.07.00	Type of Steam Generator			
	i) Single pass (tower type) or two pass type			

Sl. No.	Item Description	Station-1	Station-2	Station-3
2.08.00	Type of circulation system (Natural or Forced Circulation)			
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled)			
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m ²)			
2.11.0	Type of fuel used			
2.11.1	Firing rate			
2.11.2	Calorific value of fuel (Kcal/kg)			
2.12.00	Designed Boiler efficiency and corresponding GCV			
2.13.00	Tested boiler efficiency and corresponding GCV			
2.14.00	Tested boiler efficiency corrected to design conditions and corresponding GCV			
2.15.00	a) Whether used for two shifting	Yes*/No*	*Yes/*No	*Yes/*No
	b) If yes, number of such operations it has been designed for			
	c) No. of actual two shifting cycles it has actually operated on till date			

Sl. No.	Item Description	Station-1	Station-2	Station-3

2.16.0 Minimum start-up time achieved

- i) Cold (after 72 hrs. of unit shut down)
- ii) Warm (after 36 hrs. of unit shut down)
- iii) Hot (after 8 hrs. of unit shut down)

2.17.00 Availabilities of steam generator for last two years

2.18.00 Maximum total NOx emission (thermal as well as fuel) from the steam generators

Details of Steam Turbine Generator

3.00.00 Name and address of steam turbine generator set manufacturer

3.01.00 No. of Steam Turbine Generator set supplied for the station

3.02.00 Capacity of Turbine Generator Set in MW of unit

3.03.00 Steam Turbine make & model

3.04.00 *Tandem Compound / *Cross Compound

3.05.00 No. of Reheat

3.6.0 No. of Cylinders

- (a) HP

Sl. No.	Item Description	Station-1	Station-2	Station-3
	(b) IP			
	(c) LP			
	(d) Whether HP & IP cylinders are combined	*Yes/*No	*Yes/*No	*Yes/*No
3.7.0	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP Turbine (if applicable)			
	(d) LP Turbine			
3.08.00	Main Steam Pressure (gauge)			
3.09.00	Main Steam Temperature (deg. C)			
3.10.00	Reheat Steam Temperature (deg. C)			
3.11.00	Exhaust Pressure (ata)			
3.12.00	Condensing Type			
3.13.00	Rated Speed (rpm) and Operating Frequency Range (Hz)			
3.14.00	No. of Steam extractions			
3.15.00	Steam Turbine and Generator coupled directly	Yes*/No*	*Yes/*No	*Yes/*No
3.16.00	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor

Sl. No.	Item Description	Station-1	Station-2	Station-3
4.00.00	Generator Details			
4.01.00	Generator make and model No.			
4.02.00	Rated MVA			
4.03.00	Rated Power Factor			
4.04.00	MW rating			
4.05.00	Rated voltage (kV)			
4.06.00	No. of phases			
4.07.00	No. of poles			
4.08.00	Mounting	*Hori- zontally/ *Vertical	*Hori- zontally/ *Vertical	*Hori- zontally/ *Vertical
4.09.00	Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
4.10.00	Cylindrical rotor type	* Yes/*No	* Yes/*No	* Yes/*No
4.11.00	Cooling medium			
	(a) Stator			
	(b) Rotor			
4.12.0	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			

Sl. No.	Item Description	Station-1	Station-2	Station-3
5.00.00	List of balance power plant equipments and their manufacturers name(s) for the referred stations is enclosed at Annexure.....			
6.00.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator and Steam Turbine Generator Set with their associated auxiliaries and facilities is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
6.01.00	Documentary evidence in support of above QR data is enclosed at Annexure..... to this Attachment			
7.00.00	List of all the similar Power Plants under execution along with the details such as order no. & date, order value and scheduled date of commissioning is enclosed separately at Annexure.....			
8.00.00	List of all the similar Power Plants executed by *us / *PMO, where scope of work included Engineering management, Procurement management, Construction management and commissioning / supervision of commissioning, along with the date of commissioning is enclosed separately at Annexure.....			

3.0.0 *Since the Project Management of the EPC package is to be carried out by a Project Management Organisation (other than the Bidder), we are furnishing herewith Undertaking w.r.t Deed of Joint Undertaking (DJU) executed by us and the Project management Organisation as per clause 4.1.0(b) of Item No. 4 of BDS, which is enclosed at Annexure_ to this Attachment.

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common seal).....

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS(2X800 MW)/EPC/IPHB**

(Engineering Experience of the Bidder / Architect Engineering Firm as per Clause 5.0.0, Item No. 4.0 of BDS, to be filled by all the Bidders)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

We confirm that the Engineering of the Complete EPC Package shall be carried out by *our self /
***Architect Engineering Firm(s) M/s..... and**
***M/s.....**

1.0.0(a) *We, M/s..... (Bidder), confirm that we have carried out Engineering of at least one (1) no. of pulverised coal / lignite fired reheat type **supercritical** unit, with minimum unit rating of 500MW, consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, Steam Generator start-up system, regenerative heating and pumping system, Power cycle piping and flash tanks/flash boxes, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening, as per clause 5.1.0(a)(i), item no. 4 of BDS.

*We, M/s..... (Bidder), do not meet the above mentioned requirement as per clause 5.1.0(a)(i), Item No. 4 of BDS but meet the requirement as per clause 5.1.0(a)(ii). Hence, in accordance with clause 5.1.0(b), item no. 4 of BDS, we have associated with M/s....., an Architect Engineering Firm, who meets the requirement indicated above, as per clause 5.1.0(a)(i), Item No. 4 of BDS. We further confirm that we shall get the engineering documents related to Thermal Cycle, Power Cycle Piping and flash tanks/flash boxes, Steam Generator Start-up system, Sizing of Main Plant equipments, interface between SG and TG, unit start-up and control philosophy vetted by the Architect Engineering Firm meeting the above requirement indicated at Clause 5.1.0(a)(i), item 4 of BDS.

*We, M/s..... (Bidder), do not meet the above mentioned requirement as per clause 5.1.0(a)(i), Item No. 4 of BDS. Hence, in accordance with clause 5.3.0(b), item no. 4 of BDS, we have associated with M/s....., an Architect Engineering Firm, who meets the requirement indicated above, as per clause 5.1.0(a)(i), Item No. 4 of BDS. We further confirm that we shall get the engineering of the Main Plant equipment / systems i.e. Steam Generator and Steam Turbine Generator Sets alongwith their auxiliaries including mills, fans, air pre-heaters, steam generator start-up system, re-generative heating and pumping system, power cycle piping and flash tanks/ flash boxes and interphase between boiler and turbine by the Architect Engineering Firm meeting the above requirement indicated at Clause 5.1.0(a)(i), item 4 of BDS.

The qualification details of *Us/ *Our Architect Engineering Firm are furnished as below :

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.00.00	Details of Architect Engineering Experience of the *Bidder / *Architect Engineering Firm			
1.1.0	* Name of Bidder / Architect Engineering Firm			
1.1.1	* Address of Engineering Firm including telephone no., Fax no. and e-mail			
1.1.2	* Name and designation of responsible person in the Engineering Firm			
1.2.0	Name of the reference station and its location			
1.2.1	Name, address, email, Tel no. and Fax of owner of the station			
1.2.2	Name and designation of responsible person in owner's organisation including address, email, telephone no. and fax no.			
1.2.3	No. of units & Capacity of each unit in MW			
1.2.4	Contract No. & Date			
1.2.5	Starting date of the project			
1.2.6	Schedule date of Commissioning			
1.2.7	Actual date of Commissioning			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.02.08	Date of commencement of successful operation			
1.02.09	Whether coal / lignite fired	*Yes/*No	*Yes/*No	*Yes/*No
1.02.10	Whether reheat type Supercritical unit	*Yes/*No	*Yes/*No	*Yes/*No
1.02.11	Scope of work included Engineering for the following :			
	(i) Steam Generator & their Auxiliaries	*Yes/*No	*Yes/*No	*Yes/*No
	(ii) Steam Turbine Generator & their Auxiliaries	*Yes/*No	*Yes/*No	*Yes/*No
	(iii) Mills	*Yes/*No	*Yes/*No	*Yes/*No
	(iv) Fans	*Yes/*No	*Yes/*No	*Yes/*No
	(v) Air pre-heaters	*Yes/*No	*Yes/*No	*Yes/*No
	(vi) Steam generator start-up system	*Yes/*No	*Yes/*No	*Yes/*No
	(vii) Regenerative heating and pumping system	*Yes/*No	*Yes/*No	*Yes/*No
	(viii) Power cycle piping and flash tanks/flash boxes	*Yes/*No	*Yes/*No	*Yes/*No
1.3.0	Steam Generator Set			
1.3.1	Steam Generator Make & Model			
1.3.2	Steam Generator steam flow capacity at SH outlet (T/Hr.)			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.03.03	Main Steam Temperature at SH outlet (°C)			
1.03.04	Main Steam Pressure at SH outlet [kg/cm ² /(a)]			
1.03.05	Reheat steam flow (T/Hr.)			
1.03.06	a) Reheater outlet pressure [kg/cm ² (a)]			
	b) Reheater outlet temperature (°C)			
1.03.07	Whether balanced draft type or not	Yes*/No*	Yes*/No*	Yes*/No*
1.03.08	Type of Steam Generator			
	i) Single pass (tower type) or two pass type			
	ii) Once through type	Yes*/No*	Yes*/No*	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*
1.03.09	Type of circulation system (Natural or Forced Circulation)			
1.03.10	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled)			
1.03.11	Minimum mass flow through the water wall tubes (Kg/sec./m ²)			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.3.12	Type of fuel used			
1.3.13	Firing rate			
1.3.14	Calorific value of fuel (Kcal/kg)			
1.3.15	Designed Boiler efficiency and corresponding GCV			
1.3.16	Tested boiler efficiency and corresponding GCV			
1.3.17	Tested boiler efficiency corrected to design conditions and corresponding GCV			
1.3.18	a) Whether used for two shifting	Yes*/No*	Yes*/No*	Yes*/No*
	b) If yes, number of such operations it has been designed for			
	c) No. of actual two shifting cycles it has actually operated on till date			
1.3.19	Minimum start-up time achieved			
	i) Cold (after 72 hrs. of unit shut down)			
	ii) Warm (after 36 hrs. of unit shut down)			
	iii) Hot (after 8 hrs. of unit shut down)			
1.3.20	Availabilities of steam generator for last two years			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.3.21	Maximum total NOx emission (thermal as well as fuel) from the steam generators			
1.4.0	Details of Steam Turbine Generator			
1.4.1	Steam Turbine Make & Model			
1.4.2	No. of Cylinders			
	(a) HP			
	(b) IP			
	(c) LP			
	(d) Whether HP & IP cylinders are combined	*Yes/*No	*Yes/*No	*Yes/*No
1.4.3	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP Turbine (if applicable)			
	(d) LP Turbine			
1.4.4	Main Steam Pressure (gauge)			
1.4.5	Main Steam Temperature (deg C)			
1.4.6	Reheat Steam Temperature (deg C)			
1.4.7	Exhaust Pressure (ata)			
1.4.8	Condensing Type			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.04.09	Rated Speed (rpm) and Operating Frequency Range (Hz)			
1.04.10	No. of Steam extractions			
1.04.11	Steam Turbine and Generator coupled directly	Yes*/No*	Yes*/No*	Yes*/No*
1.04.12	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
1.05.00	Generator Details			
1.05.01	Generator make and model No.			
1.05.02	Rated MVA			
1.05.03	Rated Power Factor			
1.05.04	MW rating			
1.05.05	Rated voltage (kV)			
1.05.06	No. of phases			
1.05.07	No. of poles			
1.05.08	Mounting	*Hori- zontal / *Vertical	*Hori- zontal / *Vertical	*Hori- zontal / *Vertical
1.05.09	Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
1.05.10	Cylindrical rotor type	* Yes/*No	*Yes/*No	*Yes/*No
1.05.11	Cooling medium			
	(a) Stator			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	(b) Rotor			
1.5.12	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			
1.06.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator and Steam Turbine Generator Set along with all the auxiliaries (engineered by the *Bidder/ *Architect Engineering Firm) is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
1.07.00	List of all coal / lignite fired reheat type supercritical power plants of unit rating 500 MW and above engineered (basic & detailed engg. till commissioning) along with the date of commissioning is enclosed separately at Annexure.....			
1.08.00	List of all the Supercritical Power plants of capacity 500 MW and above which are under engineering stage along with order value and scheduled commissioning date is furnished alongwith bid at Annexure.....			

1.0.0(b) We, M/s.....(Bidder), confirm that we have carried out Engineering of at least one (1) no. of pulverised coal / lignite fired reheat type unit, with minimum unit rating of 200 MW consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans Air pre-heaters, regenerative heating and pumping system, power cycle piping and flash tanks/flash boxes, coal handling plant, Ash handling plant, Condenser Cooling water system, Switchyard, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening, as per clause 5.1.0(a)(ii), item no. 4 of BDS.

*We, M/s..... (Bidder), do not meet the above mentioned requirement as per clause 5.1.0(a)(ii), Item No. 4 of BDS but meet the requirement as per clause 5.1.0(a)(i). Hence, in accordance with clause 5.3.0(b), item no. 4 of BDS, we have associated with M/s....., an Architect Engineering Firm, who meets the requirement indicated above, as per clause 5.1.0(a)(ii), Item No. 4 of BDS. We further confirm that we shall get the engineering of Balance of Plant including interphase between Main Plant and Balance of Plant done by the Architect Engineering Firm.

The details in fulfillment of requirement as per clause 5.1.0(a)(ii), Item No 4 of BDS, are furnished as below :

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3

**2.00.00 Details of Architect Engineering
Experience of the *Bidder /
*Architect Engineering Firm
(Associate)**

- 2.1.0 Name of Bidder / Architect Engineering Firm
- 2.1.1 Address of Engineering Firm including email, telephone no. & fax no.
- 2.1.2 Name and designation of responsible person in the Engineering Firm
- 2.02.00 Name of the reference station and its location

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.02.01	Name, address, email, Tel no. and Fax of owner of the station			
2.02.02	Name and designation of responsible person in owner's organisation including address, email, telephone no. and fax no.			
2.02.03	No. of units & Capacity of each unit in MW			
2.02.04	Contract No. & Date			
2.02.05	Starting date of the project			
2.02.06	Schedule date of Commissioning			
2.02.07	Actual date of Commissioning			
2.02.08	Date of commencement of successful operation			
2.02.09	Whether coal / lignite fired	*Yes/*No	*Yes/*No	*Yes/*No
2.02.10	Whether reheat type unit	*Yes/*No	*Yes/*No	*Yes/*No
2.02.10	Scope of work included Engineering for the following:			
	(i) Steam Generator & their Auxiliaries	*Yes/*No	*Yes/*No	*Yes/*No
	(ii) Steam Turbine Generator & their Auxiliaries	*Yes/*No	*Yes/*No	*Yes/*No
	(iii) Mills	*Yes/*No	*Yes/*No	*Yes/*No
	(iv) Fans	*Yes/*No	*Yes/*No	*Yes/*No
	(v) Air pre-heaters	*Yes/*No	*Yes/*No	*Yes/*No

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
(vi)	Regenerative heating and pumping system	*Yes/*No	*Yes/*No	*Yes/*No
(vii)	Power cycle piping and flash tanks / flash boxes	*Yes/*No	*Yes/*No	*Yes/*No
(viii)	Coal handling plant	*Yes/*No	*Yes/*No	*Yes/*No
(ix)	Ash handling plant	*Yes/*No	*Yes/*No	*Yes/*No
(x)	Condenser Cooling Water system	*Yes/*No	*Yes/*No	*Yes/*No
(xi)	Switchyard	*Yes/*No	*Yes/*No	*Yes/*No

* Applicant to strike out whichever is not applicable.

2.3.0 Steam Generator Set

2.3.1 Steam Generator Make & Model

2.3.2 Steam Generator steam
flow capacity at SH outlet (T/Hr.)

2.3.3 Main Steam Temperature
at SH outlet (°C)

2.3.4 Main Steam Pressure
at SH outlet [kg/cm²(a)]

2.3.5 Reheat steam flow (T/Hr.)

2.3.6 a) Reheater outlet pressure
[kg/cm² (a)]

b) Reheater outlet temperature
(°C)

2.3.7 Whether balanced draft
type or not

*Yes/*No *Yes/*No *Yes/*No

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.3.8	Type of Steam Generator			
	i) Single pass (tower type) or two pass type			
2.3.9	Type of circulation system (Natural or Forced Circulation)			
2.3.10	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled)			
2.3.11	Minimum mass flow through the water wall tubes (Kg/sec./m ²)			
2.3.12	Type of fuel used			
2.3.13	Firing rate			
2.3.14	Calorific value of fuel (Kcal/kg)			
2.3.15	Designed Boiler efficiency and corresponding GCV			
2.3.16	Tested boiler efficiency and corresponding GCV			
2.3.17	Tested boiler efficiency corrected to design conditions and corresponding GCV			
2.3.18	a) Whether used for two shifting	*Yes/*No	*Yes/*No	*Yes/*No
	b) If yes, number of such operations it has been designed for			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	c) No. of actual two shifting cycles it has actually operated on till date			
2.3.19	Minimum start-up time achieved			
	i) Cold (after 72 hrs. of unit shut down)			
	ii) Warm (after 36 hrs. of unit shut down)			
	iii) Hot (after 8 hrs. of unit shut down)			
2.3.20	Availabilities of steam generator for last two years			
2.3.21	Maximum total NOx emission (thermal as well as fuel) from the steam generators			
2.4.0	Details of Steam Turbine Generator			
2.4.1	Steam Turbine Make & Model			
2.4.2	No. of Cylinders			
	(a) HP			
	(b) IP			
	(c) LP			
	(d) Whether HP & IP cylinders are combined	*Yes/*No	*Yes/*No	*Yes/*No

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.4.3	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP Turbine (if applicable)			
	(d) LP Turbine			
2.04.04	Main Steam Pressure (gauge)			
2.04.05	Main Steam Temperature (deg C)			
2.04.06	Reheat Steam Temperature (deg C)			
2.04.07	Exhaust Pressure (ata)			
2.04.08	Condensing Type			
2.04.09	Rated Speed (rpm) and Operating Frequency Range (Hz)			
2.04.10	No. of Steam extractions			
2.04.11	Steam Turbine and Generator coupled directly	*Yes/*No	*Yes/*No	*Yes/*No
2.04.12	Steam Turbine Generator Set Installation	*Indoor/* *Outdoor	*Indoor/ Outdoor	*Indoor/ Outdoor
2.05.00	Generator Details			
2.05.01	Generator make and model No.			
2.05.02	Rated MVA			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.05.03	Rated Power Factor			
2.05.04	MW rating			
2.05.05	Rated voltage (kV)			
2.05.06	No. of phases			
2.05.07	No. of poles			
2.05.08	Mounting	*Hori- zontal/ *Vertical	*Hori- zontal/ *Vertical	*Hori- zontal/ *Vertical
2.05.09	Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
2.05.10	Cylindrical rotor type	*Yes/*No	*Yes/*No	*Yes/*No
2.05.11	Cooling medium			
	(a) Stator			
	(b) Rotor			
2.5.12	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.06.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator and Steam Turbine Generator Set along with all the auxiliaries (engineered by *Bidder/*Architect Engineering Firm) is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
2.07.00	List of all coal / lignite fired reheat type power plants of unit rating 200 MW and above engineered (basic & detailed engg. till commissioning) along with the date of commissioning is enclosed separately at Annexure.....			
2.08.00	List of all the Power plants of capacity 200 MW and above which are under engineering stage along with order value and scheduled commissioning date is furnished alongwith bid at Annexure.....			

Note : In case the Bidder does not meet either the requirements as per clause 5.1.0(a)(i) & (ii) or 5.2.0(a)(i) & (ii), Item No. 4 of BDS, the Bidder shall get the complete Engineering of EPC Package done by an Architect Engineering Firm who meets the requirement indicated at clause 5.1.0(a)(i) & (ii), item no. 4 of BDS and shall furnish the required details on behalf of Architect Engineering Firm, as per Clause 1.0.0(a) & 1.0.0(b) above.

2.09.00 Deed of Joint Undertaking executed by the Bidder and the Architect Engineering Firm(s) is/are attached at Annexure.....

2.0.0(a) *We, M/s.....(Steam Generator and / or Steam Turbine Generator Manufacturer bidding under route *1.1.0 / *1.2.0, as Bidder), confirm that we *are engaged / *have completed Engineering of at least one (1) no. of pulverised *coal / *lignite fired reheat type **supercritical** unit, with minimum unit rating of 500MW, consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, Steam Generator start-up system, regenerative heating and pumping system, Power cycle piping and flash tanks/flash boxes (*in a single contract or *in **two separate contracts in a single unit**), which is under execution prior to the date of Techno-Commercial bid opening, as per clause 5.2.0(a)(i), item no. 4 of BDS.

The details are furnished as below :

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.00.00	Details of Architect Engineering Experience of the Bidder			
1.1.0	Name of the reference station and its location			
1.1.1	Name, address, email, Tel no. and Fax of owner of the station			
1.1.2	Name and designation of responsible person in owner's organisation including address, email, telephone no. and fax no.			
1.1.3	No. of units & Capacity of each unit in MW			
1.1.4	Contract No. & Date (in case of two separate contracts for a single unit, Bidder to furnish ref. nos. and details of both the contracts.)			
1.1.5	Starting date of the project			
1.1.6	Schedule date of Commissioning			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.01.07	Whether coal / lignite fired	*Yes/*No	*Yes/*No	*Yes/*No
1.01.08	Whether reheat type Supercritical unit	*Yes/*No	*Yes/*No	*Yes/*No
1.01.09	Scope of work included Engineering for the following :			
	(i) Steam Generator & their Auxiliaries	*Yes/*No	*Yes/*No	*Yes/*No
	(ii) Steam Turbine Generator & their Auxiliaries	*Yes/*No	*Yes/*No	*Yes/*No
	(iii) Mills	*Yes/*No	*Yes/*No	*Yes/*No
	(iv) Fans	*Yes/*No	*Yes/*No	*Yes/*No
	(v) Air pre-heaters	*Yes/*No	*Yes/*No	*Yes/*No
	(vi) Steam generator start-up system	*Yes/*No	*Yes/*No	*Yes/*No
	(vii) Regenerative heating and pumping system	*Yes/*No	*Yes/*No	*Yes/*No
	(viii) Power cycle piping and flash tanks/flash boxes	*Yes/*No	*Yes/*No	*Yes/*No
	The above scope is under *single contract / *two separate contract by us in a single unit	*Yes/*No	*Yes/*No	*Yes/*No
1.02.00	Steam Generator Set			
1.02.01	Steam Generator Make & Model			
1.02.02	Steam Generator steam flow capacity at SH outlet (T/Hr.)			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.2.3	Main Steam Temperature at SH outlet (°C)			
1.2.4	Main Steam Pressure at SH outlet [kg/cm ² /(a)]			
1.2.5	Reheat steam flow (T/Hr.)			
1.2.6	a) Reheater outlet pressure [kg/cm ² (a)]			
	b) Reheater outlet temperature (°C)			
1.02.07	Whether balanced draft type or not	*Yes/*No	*Yes/*No	*Yes/*No
1.02.08	Type of Steam Generator			
	i) Single pass (tower type) or two pass type			
	ii) Once through type	Yes*/No*	Yes*/No*	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*
1.2.9	Type of circulation system (Natural or Forced Circulation)			
1.2.10	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled)			
1.2.11	Minimum mass flow through the water wall tubes (Kg/sec./m ²)			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.2.12	Type of fuel to be used			
1.2.13	Firing rate			
1.2.14	Calorific value of fuel (Kcal/kg)			
1.2.15	Designed Boiler efficiency and corresponding GCV			
1.2.16	Tested boiler efficiency and corresponding GCV			
1.2.17	Tested boiler efficiency corrected to design conditions and corresponding GCV			
1.2.18	a) Whether used for two shifting			
	b) If yes, number of such operations it has been designed for			
	c) No. of actual two shifting cycles it has actually operated on till date			
1.2.19	Minimum start-up time achieved			
	i) Cold (after 72 hrs. of unit shut down)			
	ii) Warm (after 36 hrs. of unit shut down)			
	iii) Hot (after 8 hrs. of unit shut down)			
1.2.20	Availabilities of steam generator for last two years			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.03.21	Maximum total NOx emission (thermal as well as fuel) from the steam generators			
1.3.0	Details of Steam Turbine Generator			
1.3.1	Steam Turbine Make & Model			
1.3.2	No. of Cylinders			
	(a) HP			
	(b) IP			
	(c) LP			
	(d) Whether HP & IP cylinders are combined	*Yes/*No	*Yes/*No	*Yes/*No
1.3.3	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP Turbine (if applicable)			
	(d) LP Turbine			
1.3.4	Main Steam Pressure (gauge)			
1.3.5	Main Steam Temperature (deg C)			
1.3.6	Reheat Steam Temperature (deg C)			
1.033.07	Exhaust Pressure (ata)			
1.03.08	Condensing Type			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
1.03.09	Rated Speed (rpm) and Operating Frequency Range (Hz)			
1.03.10	No. of Steam extractions			
1.03.11	Steam Turbine and Generator coupled directly	*Yes/*No	*Yes/*No	*Yes/*No
1.03.12	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
1.04.00	Generator Details			
1.04.01	Generator make and model No.			
1.04.02	Rated MVA			
1.04.03	Rated Power Factor			
1.04.04	MW rating			
1.04.05	Rated voltage (kV)			
1.04.06	No. of phases			
1.04.07	No. of poles			
1.04.08	Mounting	*Hori- zontally/ *Vertical	*Hori- zontally/ *Vertical	*Hori- zontally/ *Vertical
1.04.09	Installation *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
1.04.10	Cylindrical rotor type	*Yes/*No	*Yes/*No	*Yes/*No
1.04.11	Cooling medium			
	(a) Stator			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	(b) Rotor			
1.4.12	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			
1.05.00	List of all coal / lignite fired reheat type supercritical power plants of unit rating 500 MW and above engineered (basic & detailed engg. till commissioning) is enclosed separately at Annexure.....			
1.06.00	List of all the Supercritical Power Plants of capacity 500 MW and above which are under engineering stage along with order value and scheduled commissioning date is furnished along with bid at Annexure.....			
1.07.00	Certificate(s) from the Owner that the Bidder *are engaged/ *have completed Engineering prior to date of Techno-Commercial Bid Opening is furnished at Annexure..... to this Attachment			
1.08.00	Documentary evidence in support of QR data is enclosed at Annexure..... to this Attachment			

- 2.0.0(b) *We, M/s.....(Steam Generator and / or Steam Turbine Generator manufacturer bidding under route 1.1.0 / 1.2.0 item no. 4 of BDS, as Bidder), confirm that we have carried out Engineering of at least one (1) no. of pulverised coal / lignite fired reheat type unit, with minimum unit rating of 500MW consisting of steam generator and steam turbine generator sets along with their auxiliaries including mills, fans Air pre-heaters, regenerative heating and pumping system, power cycle piping and flash tanks/flash boxes, coal handling plant, Ash handling plant, Condenser Cooling water system, Switchyard, which is in successful operation for a period of not less than one (1) year prior to the date of Techno-Commercial bid opening, as per clause 5.2.0(a)(ii), item no. 4 of BDS.

The details are furnished as below :

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3

**2.00.00 Details of Architect Engineering
Experience of the Bidder**

- 2.1.0 Name of the reference station and its location
- 2.1.1 Name, address, email, Tel no. and Fax of owner of the station
- 2.1.2 Name and designation of responsible person in owner's organisation including address, email, telephone no. and fax no.
- 2.1.3 No. of units & Capacity of each unit in MW
- 2.1.4 Contract No. & Date
- 2.1.5 Starting date of the project
- 2.1.6 Schedule date of Commissioning
- 2.1.7 Actual date of Commissioning
- 2.1.8 Date of commencement of successful operation

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.01.09	Whether coal / lignite fired	*Yes/*No	*Yes/*No	*Yes/*No
2.01.10	Whether reheat type unit	*Yes/*No	*Yes/*No	*Yes/*No
2.01.11	Scope of work included Engineering for the following :			
	(i) Steam Generator sets along with their auxiliaries	*Yes/*No	*Yes/*No	*Yes/*No
	(ii) Steam Turbine Generator sets along with their auxiliaries	*Yes/*No	*Yes/*No	*Yes/*No
	(iii) Mills	*Yes/*No	*Yes/*No	*Yes/*No
	(iv) Fans	*Yes/*No	*Yes/*No	*Yes/*No
	(v) Air pre-heaters	*Yes/*No	*Yes/*No	*Yes/*No
	(vi) Regenerative heating and pumping system	*Yes/*No	*Yes/*No	*Yes/*No
	(vii) Power cycle piping and flash tanks/flash boxes	*Yes/*No	*Yes/*No	*Yes/*No
	(viii) Coal handling plant	*Yes/*No	*Yes/*No	*Yes/*No
	(ix) Ash handling plant	*Yes/*No	*Yes/*No	*Yes/*No
	(x) Condenser Cooling Water system	*Yes/*No	*Yes/*No	*Yes/*No
	(xi) Switchyard	*Yes/*No	*Yes/*No	*Yes/*No
2.2.0	Steam Generator Set			
2.2.1	Steam Generator Make & Model			
2.2.2	Steam Generator steam flow capacity at SH outlet (T/Hr.)			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	Main Steam Temperature at SH outlet (°C)			2.02.03
2.02.04	Main Steam Pressure at SH outlet [kg/cm ² /(a)]			
2.02.05	Reheat steam flow (T/Hr.)			
2.02.06	a) Reheater outlet pressure [kg/cm ² (a)]			
	b) Reheater outlet temperature (°C)			
2.02.07	Whether balanced draft type or not	Yes*/No*	Yes*/No*	Yes*/No*
2.02.08	Type of Steam Generator			
	i) Single pass (tower type) or two pass type			
	ii) Once through type	Yes*/No*	Yes*/No*	Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No*	Yes*/No*	Yes*/No*
2.02.09	Type of circulation system (Natural or Forced Circulation)			
2.02.10	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled)			
2.02.11	Minimum mass flow through the water wall tubes (Kg/sec./m ²)			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.2.12	Type of fuel used			
2.2.13	Firing rate			
2.2.14	Calorific value of fuel (Kcal/kg)			
2.2.15	Designed Boiler efficiency and corresponding GCV			
2.2.16	Tested boiler efficiency and corresponding GCV			
2.2.17	Tested boiler efficiency corrected to design conditions and corresponding GCV			
2.2.18	a) Whether used for two shifting	Yes*/No*	Yes*/No*	Yes*/No*
	b) If yes, number of such operations it has been designed for			
	c) No. of actual two shifting cycles it has actually operated on till date			
2.2.19	Minimum start-up time achieved			
	i) Cold (after 72 hrs. of unit shut down)			
	ii) Warm (after 36 hrs. of unit shut down)			
	iii) Hot (after 8 hrs. of unit shut down)			
2.2.20	Availabilities of steam generator for last two years			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.2.21	Maximum total NOx emission (thermal as well as fuel) from the steam generators			
2.3.0	Details of Steam Turbine Generator			
2.3.1	Steam Turbine Make & Model			
2.3.2	No. of Cylinders			
	(a) HP			
	(b) IP			
	(c) LP			
	(d) Whether HP & IP cylinders are combined	*Yes/*No	*Yes/*No	*Yes/*No
2.3.3	Module Number			
	(a) HP Turbine			
	(b) IP Turbine			
	(c) Combined HP-IP Turbine (if applicable)			
	(d) LP Turbine			
2.3.4	Main Steam Pressure (gauge)			
2.3.5	Main Steam Temperature (deg.C)			
2.3.6	Reheat Steam Temperature (deg.C)			
2.3.7	Exhaust Pressure (ata)			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
2.03.08	Condensing Type			
2.03.09	Rated Speed (rpm) and Operating Frequency Range (Hz)			
2.03.10	No. of Steam extractions			
2.03.11	Steam Turbine and Generator coupled directly	*Yes/*No	*Yes/*No	*Yes/*No
2.03.12	Steam Turbine Generator Set Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
2.04.00	Generator Details			
2.04.01	Generator make and model No.			
2.04.02	Rated MVA			
2.04.03	Rated Power Factor			
2.04.04	MW rating			
2.04.05	Rated voltage (kV)			
2.04.06	No. of phases			
2.04.07	No. of poles			
2.04.08	Mounting	*Hori- zontally/ *Vertical	*Hori- zontally/ *Vertical	*Hori- zontally/ *Vertical
2.04.09	Installation	*Indoor/ *Outdoor	*Indoor/ *Outdoor	*Indoor/ *Outdoor
2.04.10	Cylindrical rotor type	*Yes/*No	*Yes/*No	*Yes/*No
2.04.11	Cooling medium			
	(a) Stator			

S.No.	Item Description	Installation No.1	Installation No.2	Installation No.3
	(b) Rotor			
2.4.12	Thermal Class of insulation			
	(a) Stator			
	(b) Rotor			
2.05.00	Certificate from the Owner of the reference plant that the aforesaid Steam Generator and Steam Turbine Generator Set along with all the auxiliaries is in successful operation for a period of not less than 1 year prior to date of Techno-Commercial Bid opening and caused no serious problem in past, is furnished along with bid at Annexure			
2.06.00	List of all coal / lignite fired reheat type power plants of unit rating 500 MW and above engineered (basic & detailed engg. till commissioning) along with the date of commissioning is enclosed separately at Annexure.....			
2.07.00	List of all the Power plants of capacity 500 MW and above which are under engineering stage along with order value and scheduled commissioning date is furnished alongwith bid at Annexure.....			

(Designation).....

(Common seal).....

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS(2X800 MW)/EPC/IPHB**

**Phased Manufacturing Programme and Transfer of Technology
as per Clause 3.0.0 of Item No. 4.0 of BDS applicable for all Bidders)**

**PROFORMA OF LETTER OF UNDERTAKING TO BE SUBMITTED
BY THE BIDDER FOR PHASED MANUFACTURING PROGRAMME
ALONGWITH THE BID IS ATTACHED AT ATTACHMENT-18 TO
BID FORM (TECHNO-COMMERCIAL)**

Date :	(Signature).....
Place :	(Printed Name).....
	(Designation).....
	(Common Seal).....

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

**(Proforma of Letter of Undertaking to be Submitted by the
Qualified Steam Generator Manufacturer /
Qualified Steam Turbine Generator Manufacturer / Qualified
Generator Manufacturer / Promoter holding minimum 51% in
the Joint Venture Company / Promoter holding minimum 26% equity in
the Joint Venture Company / Parent company of Indian majority stake holder
in JV Company / *Indian Company who holds atleast 51% equity in
Joint Venture Company / *Wholly owned subsidiary / *Indian
Subsidiary Company / *JV Company for Phased Manufacturing
Programme and Transfer of Technology alongwith the Bid as per
Note No. 9 for Clause No. 1.0.0 of Item No. 4.0 of BDS)**

LETTER OF UNDERTAKING

(To be executed on Non-Judicial Stamp Paper of Requisite Value)

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

- *1.0 We undertake that as per the requirement of Note 9 to Clause No. 1.0.0, Item No. 4.0 of BDS for Clause No. *1.1.2(a)/*1.3.1/*Note 4 of Clause 1.0.0, Item No. 4.0 of BDS, we M/s. (Name of Qualified Steam Generator Manufacturer/Qualified Steam Turbine Generator Manufacturer) undertake that Indian Subsidiary Company M/s. shall remain our subsidiary for a lock in period of 7 years from the date of incorporation of this Indian Subsidiary Company or upto the end of Defect Liability period of the contract, whichever is later.

We are enclosing the Board Resolution(s) in support of above at Annexure-..... to this undertaking.

- *2.0 We undertake that as per the requirement of Note 9 to Clause No. 1.0.0, Item No. 4.0 of BDS for Clause No. *1.1.2(b) / *1.4.1 / *1.5.1 / *Note 4 of Clause 1.0.0, Item No. 4.0 of BDS, we M/s. (Name of Qualified Steam Generator Manufacturer/Qualified Steam Turbine Generator Manufacturer) undertake that we shall maintain minimum equity participation of 26% in the Indian JV Company M/s..... for a lock in period of 7 years from the date of incorporation of this Indian JV Company or upto the end of Defect Liability period of the contract, whichever is later.

We are enclosing the Board Resolution(s) in support of above at Annexure-..... to this undertaking.

- *3. We, undertake that as per the requirement of Note 9 to Clause No. 1.0.0, Item No. 4.0 of BDS for Clause No. *1.1.2 (b) / *1.4.1 / *1.5.1 / *Note 6 of Clause 1.0.0, Item No. 4.0 of BDS, we M/s. (Majority Stakeholder) undertake that we shall maintain minimum equity participation of 51% in the Indian JV Company M/s. for a lock in period of 7 years from the date of incorporation of JV Company or upto the end of Defect Liability period of the contract, whichever is later.

We are enclosing the Board Resolution in support of above at Annexure-..... to this undertaking.

- *4.0 We undertake that as per the requirement of Note 9 to Clause No. 1.0.0, Item No. 4.0 of BDS for Clause No. 1.5.1, Item No. 4.0 of BDS, we M/s..... (Bidder as an Indian Company who holds atleast 51% equity in Indian JV Company) undertake that we shall maintain minimum equity participation of 51% in the Indian JV Company M/s. for a lock in period of 7 years from the date of incorporation of JV Company or upto the end of Defect Liability period of the contract, whichever is later.

We are enclosing the Board Resolution (s) in support of above as Annexure to this undertaking.

- *5.0 We undertake that as per the requirement of Note 6 & Note 9 to Clause No. 1.0.0, Item No. 4.0 of BDS, we M/s. (Parent Company of the Indian majority stake holder of the Indian JV Company) undertake that M/s (Indian majority stake holder of Indian JV Company) is our wholly owned subsidiary and we shall maintain 100% equity participation in the above wholly owned subsidiary for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of Defect Liability period of the contract, whichever is later.

We are enclosing the Board Resolution (s) in support of above as Annexure to this undertaking.

- *6.0 We undertake that as per the requirement of *Note 7 & Note 9 to Clause No. 1.0.0, Item No. 4.0 of BDS, we M/s. (Bidder) undertake that M/s (majority stake holder of Indian JV Company) is our wholly owned subsidiary maintaining minimum 51% equity in the Indian JV Company M/s, and we shall maintain 100% equity participation in the above wholly owned subsidiary for a lock in period of 7 years from the date of incorporation of JV Company or up to the end of Defect Liability period of the contract, whichever is later.

We are enclosing the Board Resolution (s) in support of above as Annexure to this undertaking.

- *7.0 We undertake that as per the requirement of Note 8 & Note 9 to Clause No. 1.0.0, Item No. 4.0 of BDS, we M/s. (*Indian Subsidiary Company/*Indian JV Company) undertake that M/s (subsidiary of *Indian Subsidiary Company/*Indian JV Company registered for manufacturing Supercritical Steam Generator / Supercritical Steam Turbine Generator in India) shall remain our subsidiary with equity lock in for a minimum lock in

period of 7 years from the date of incorporation of the manufacturing company or up to the end of Defect Liability period of the contract, whichever is later.

We are enclosing the Board Resolution (s) in support of above as Annexure to this undertaking.

*8.0 We undertake that as per the requirement of Note 9 to Clause No. 1.0.0, Item No. 4.0 of BDS for Clause No. *1.1.4 / *1.3.3 / *1.4.3 / *1.5.3 / *1.6.4, Item No. 4.0 of BDS, we M/s. (Name of Qualified Generator Manufacturer) undertake that we shall maintain minimum equity participation of *10% in Indian Subsidiary Company / Indian JV Company (as the case may be), M/s. for a lock in period of 7 years from the date of incorporation of *Indian Subsidiary Company / *Indian JV Company or upto the end of Defect Liability period of the contract, whichever is later.

We are enclosing the Board Resolution(s) in support of above at Annexure-..... to this undertaking.

Date : (Signature).....
Place : (Printed Name).....
(Designation).....
(Common Seal).....

Note :

*** Bidder to Strike if not applicable.**

Power of Attorney of the person signing is to be furnished by bidder and to be attached along with the Undertaking.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

**(Proforma of Letter of Undertaking ” for support
from the Qualified Steam Generator Manufacturer /Qualified Steam Turbine
Generator Manufacturer / Qualified Generator Manufacturer, instead of
undertaking/documents/
Board Resolution regarding maintaining the Subsidiary
Status/minimum equity for lock-in period, to be Submitted by the Bidder alongwith
the Bid, as per Note No. 9 to Clause No. 1.0.0 of Item No. 4.0 of BDS)**

**LETTER OF UNDERTAKING
(To be executed on Non-Judicial Stamp Paper of Requisite Value)**

We, M/s a Company incorporated under the Laws of.....
having its Registered Office at..... (hereinafter called the “Technology
Provider” for Supercritical *Steam Generator/ *Steam Turbine/ *Generator) hereby assure and
undertake as follows;

We (Technology Provider) are aware that, M/s(hereinafter called the “Employer”)
has invited Bids for design, engineering, manufacture, supply, transportation to site, construction,
installation, testing, commissioning and conductance of guarantee tests for the **KODERMA
THERMAL POWER STATION PHASE-II (2x800MW)** vide its Bidding Document No.:
DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB.

We are also aware that M/s(hereinafter called the “Bidder/Contractor”) is
submitting its bid proposal in response to the aforesaid Invitation for Bid by the Employer for,
against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS (2X800
MW)/EPC/IPHB.**

AND WHEREAS we are also aware that for the bidder to meet the Qualifying Requirements as
specified under the aforesaid Invitation for Bid / Bidding documents, the Bidder along with its
Techno-Commercial bid is required to submit a Letter of Undertaking to be provided by us, the
Technology Provider, for providing all technical assistance / services/ know-how / support for
timely resolution of any deficiency / defect related to *Steam Generator and auxiliaries/ *Steam
Turbine and Auxiliaries/ *Generator and Auxiliaries for **EPC Package for KODERMA
THERMAL POWER STATION PHASE-II (2x800MW)**, in the event, the Bid is accepted by the
Employer resulting into a Contract / Contracts.

AND WHEREAS we are aware that the Bidder will be qualified in the present bidding process on
the strength of this Letter of Undertaking.

Now, in consideration of the award of the Contract(s) to the Bidder by the Employer, We, the Technology Provider for *Steam Generator/ *Steam Turbine/ *Generator, un-conditionally agree, assure and undertake that;

- a) We, the Technology Provider for Supercritical *Steam Generator/ *Steam Turbine/ *Generator shall review and vet all the design data / documents / drawings / information including design calculations, as required by the Employer, pertaining to *Steam Generator and its Auxiliaries / *Steam Turbine and its Auxiliaries/ *Generator and its Auxiliaries before submission by the Bidder to the Employer during detailed engineering at our own expense, so as to ensure satisfactory, reliable, safe and trouble free performance of all *Steam Generators and its auxiliaries / *Steam Turbine and its Auxiliaries/ *Generator and its Auxiliaries meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s). Further, we shall participate in Technical coordination meetings (TCMs) held under the contract as per the requirement of the Employer, without any cost to the Employer.
- b) In the event of any technical deficiency / defect encountered in *Steam Generator and its Auxiliaries / *Steam Turbine and its Auxiliaries/ *Generator and its Auxiliaries during the performance of the Contract till the end of defect liability period or if the Contractor fails to demonstrate during the guarantee tests that the *Steam Generator and its Auxiliaries / *Steam Turbine and its Auxiliaries / *Generator and its Auxiliaries meet the guaranteed parameters as specified in the contract, We the Technology Provider for Supercritical *Steam Generator/ *Steam Turbine/ *Generator undertake to promptly provide all technical assistance/ services/ know-how /support including deputation of technical experts, without any cost to the Employer, to analyse and suggest corrective measures/ modifications to the equipment / systems of all the *Steam Generator and its Auxiliaries / *Steam Turbine and its Auxiliaries/ *Generator and its Auxiliaries under the Contract for resolution of the problem / issue within a reasonable time in the opinion of the Employer, as and when required to ensure satisfactory, reliable, safe and trouble free performance of all *Steam Generators and its auxiliaries / *Steam Turbine and its Auxiliaries/ *Generator and its Auxiliaries meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- c) In case of any breach of the Contract(s) committed by the Contractor or if the problem / issue cannot be resolved by the Contractor itself within a reasonable period of time, in the opinion of the Employer, the Employer shall have the right to approach directly to us and we shall support and promptly provide all technical assistance/ services/ support, without any cost to the employer, required by the Employer for timely resolution of any problem / issue related to *Steam Generator and its Auxiliaries / *Steam Turbine and its Auxiliaries/ *Generator and its Auxiliaries, so as to ensure satisfactory, reliable, safe and trouble free performance of all *Steam Generators and its auxiliaries / *Steam Turbine and its Auxiliaries/ *Generator and its Auxiliaries meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- d) The present letter of undertaking shall form an integral part of the main contract.

- e) Any dispute arising out of the present letter of undertaking shall be resolved in terms of the dispute resolution mechanism provided in the main contract.

We, hereby undertake and confirm that this Letter of Undertaking shall be irrevocable till the expiry of the defect liability period of the subject contract.

Place: For M/s... ..
Date: (For Technology Provider)

Witness: (Signature of Authorised Representative)
Name: Name:
Official Address: Designation:

Witness:
Name:
Official Address:

*** Bidder to Strike if not applicable.**

Note: Power of Attorney of the person signing the Letter of Undertaking is to be attached along with the Letter of Undertaking.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

**(Proforma of Letter of Undertaking to be Executed by the
Promoter(s) of Indian Subsidiary Company / Indian JV Company
holding equity more than 25% to be submitted alongwith the Bid
as per Note No. (v) to Clause No. 2.0.0, Item No. 4.0 of BDS)**

LETTER OF UNDERTAKING

(To be executed on Non-Judicial Stamp Paper of Requisite Value)

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

We undertake that as per the requirement of Note (v) to Clause No. 2.0.0, Item No. 4.0 of BDS, we M/s. (Name of Promoter holding more than 25% equity in the *Indian Subsidiary Company / *Indian Joint Venture JV Company) pledge our unconditional and irrevocable financial support for execution of contract (if awarded) to M/s (Name of Bidder).

We are enclosing the Board resolution in support of above as Annexure to this undertaking.

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

Note :

*** Bidder to Strike if not applicable.**

Power of Attorney of the person signing is to be furnished by bidder and to be attached along with the Undertaking.

**(Details pertaining to Financial Criteria of Qualification Requirement
as per Clause 2.1.0 of Item No. 4.0 of Bid Data Sheet)**

A) To satisfy the requirements specified in Clause 2.1.0 of Item No. 4.0 of Bid Data Sheet, Section-III, we give below the following details:

- a) In terms of Clause No. 2.1.1, we confirm that our average annual turnover in the preceding three financial years as on date of Techno-commercial bid opening is **not less than INR 20946 Million (INR Twenty Thousand Nine Hundred Forty Six Million only)** or in equivalent foreign currency.

In support of above, we are enclosing Audited Financial Statements.

Sl. No	Financial Year	Amount in Rs.
1.	2020 - 2021	
2.	2021 – 2022	
3.	2022 – 2023	
4.	Average Annual Turnover for the preceding three (3) Financial Years as on date of Techno-Commercial Bid Opening.	
5.	We have enclosed Audited financial statements for the last 3 financial years at	Annexure to this Attachment
6.	Since we are not able to furnish our audited financial statements, on stand alone entity basis, we are submitting the following documents for substantiation of our Qualification : (a) Copies of unaudited unconsolidated financial statements of the bidder alongwith copies of the audited consolidated financial statements of our Holding Company for the last 3 years enclosed at Annexure..... to this Attachment.	

	(b) Certificate from the CEO/CFO of the Holding company stating that the unaudited unconsolidated financial statements form part of the consolidated Annual Report of the Holding Company, is enclosed as per the format at Appendix-A to this Attachment.	Enclosed at Annexure
7.	Audited results for the last financial year as on the date of Techno-Commercial bid opening enclosed In case not enclosed, financial results certified by a practicing chartered accountant enclosed In case financial results certified by a practicing chartered accountant not enclosed, then Audited financial statements for FY 2019-20 enclosed. Further, a Certificate from the CEO/CFO of the Bidder stating that the "Financial results of company are under audit as on the date of Techno-Commercial Bid Opening and the certificate from the practicing chartered accountant certifying the financial parameters is not available", is enclosed Annexure as per the format at Appendix-C to this Attachment.	YES*/NO* YES*/NO* Enclosed at Annexure YES*/NO* Enclosed at Annexure

b) Since we do not satisfy the Financial Criteria stipulated at Clause No. 2.1.1 of Item 4.0 of Bid Data Sheet, Section-III, on our Own, we give below the following details of our **Holding Company** :

1. Name and Address of the Holding Company:

2. Turnover of the Holding Company with following details:

Sl.No	Financial Year	Amount in INR
a)	2020 - 2021	.....
b)	2021 – 2022	.....
c)	2022 – 2023	.....
d)	Average Annual Turnover for the preceding three (3) Financial Years as on date of Techno-Commercial Bid Opening.	.....
e)	We have enclosed audited Financial Statements for the preceding three (3) Financial years	Annexure to this Attachment

Sl. No	Description	As on last day of the preceding financial year
3.	Paid-up Share Capital of the Holding Company	.....

Sl. No	Description	As on last day of the preceding financial year
4.	Net Worth of the Holding Company	.....
5.	%age of Net worth to Paid-up Share Capital of the Holding Company	.....
6.	A Letter of Undertaking from the Holding Company, supported by Board Resolution of the Holding Company, pledging unconditional and irrevocable financial support for execution of the contract by the bidder in case of award is enclosed as per the format at Appendix-B to this Attachment. A power of attorney of the person signing on behalf of holding company is also enclosed at Annexure to this Attachment.	
7.	Documentary evidence like Annual Report/Audited financial statements together with relevant schedules for the preceding financial year/ certification of financial statements from a practicing Chartered Accountant etc. in respect of holding company in support of above is enclosed at Annexure..... to this Attachment.	
8.	Audited results for the last financial year as on the date of Techno-Commercial bid opening enclosed	YES*/NO*
	In case not enclosed, financial results certified by a practicing chartered accountant enclosed	YES*/NO* Enclosed at Annexure
	In case financial results certified by a practicing chartered accountant not enclosed, then Audited financial statements for FY 2019-20 also enclosed. Further, a Certificate from the CEO/CFO of the Holding Company stating that the "Financial results of company are under audit as on the date of Techno-Commercial Bid Opening and the certificate from the practicing chartered accountant certifying the financial parameters is not available", is enclosed Annexure as per the format at Appendix-C to this Attachment.	YES*/NO* Enclosed at Annexure

B) To satisfy the requirements specified in Clause 2.1.2 of Item No. 4.0 of Bid Data Sheet, Section-III, We give below the following details:

a) We hereby confirm that net worth of our company as on the last day of the preceding financial year is **Positive**.

The Details are as under:

Sl. No	Description	As on last day of the preceding financial year
1.	Paid-up Share Capital	
2.	Net Worth	
3.	%age of Net worth to Paid-up Share Capital	
4.	Documentary evidence like Audited financial statements for the preceding financial year* in support of above is enclosed at Annexure to this Attachment.	
5.	Since we are not able to furnish our audited financial statements, on stand alone entity basis, we are submitting the following documents for substantiation of our Qualification : (a) Copies of unaudited unconsolidated financial statements of the bidder alongwith copies of the audited consolidated financial statements of our Holding Company for the last 3 years enclosed at Annexure..... to this Attachment. (b) Certificate from the CEO/CFO of the Holding company stating that the unaudited unconsolidated financial statements form part of the consolidated Annual Report of the Holding Company, is enclosed as per the format at Appendix-A to this Attachment.	Enclosed at Annexure
6.	Audited results for the last financial year as on the date of Techno-Commercial bid opening enclosed In case not enclosed, financial results certified by a practicing chartered accountant enclosed In case financial results certified by a practicing chartered accountant not enclosed, then Audited financial statements for FY 2019-20 also enclosed. Further, a Certificate from the CEO/CFO of the Bidder stating that the "Financial results of company are under audit as on the date of Techno-Commercial Bid Opening and the certificate from the practicing chartered accountant certifying the financial is not available", is	YES*/NO* YES*/NO* Enclosed at Annexure YES*/NO* Enclosed at Annexure

	enclosed Annexure as per the format at Appendix-C to this Attachment.	

Notes:

- (i) Net worth means the sum total of the paid up share capital and free reserves. Free reserve means all reserves credited out of the profits and share premium account but does not include reserves credited out of the revaluation of the assets, write back of depreciation provision and amalgamation. Further any debit balance of Profit and Loss account and miscellaneous expenses to the extent not adjusted or written off, if any, shall be reduced from reserves and surplus.
- (ii) Other income shall not be considered for arriving at annual turnover.
- (iii) "Holding Company" and "Subsidiary Company" shall have the meaning ascribed to them as per Companies Act of India.
- (iv) For annual Turnover indicated in foreign currency, the exchange rate as on seven (7) days prior to the date of Techno-Commercial bid opening shall be used.
- (v) In case the bidder / collaborator(s) / associate(s) participating under Clause 1.3.0 or 1.4.0, do not meet the turnover requirement, then, the Turnover of any of the Promoters individually or all the promoters (in a combined manner) (each having Equity Stake more than 25%) of the Subsidiary Company / JV Company would be considered. Each such promoter of the Subsidiary Company / JV Company shall have to meet the Net Worth criteria individually as per clause 2.1.2 and/or 2.2.2. In such an event the Bidder would be required to furnish along with its techno-commercial bid, a Letter of Undertaking from such promoter(s), supported by Board Resolution as per the format enclosed in the bidding documents, pledging unconditional and irrevocable financial support for execution of the Contract by the Bidder in case of award.
- (vi) Route 1.2.0 has not been used for the purpose of qualification in Qualifying Requirements. Wherever Clause 1.2.0, 1.2.1, 1.2.2 & 1.2.3 (as per item 4 of BDS) have been referred to either directly or indirectly in any qualification routes / financial criteria, the same should be deemed to have been omitted and qualifying requirements should be read accordingly.

**PROFORMA OF CERTIFICATE FROM THE CEO/CFO OF THE HOLDING
COMPANY IN ACCORDANCE WITH CLAUSE 2.1.3 OF ITEM NO. 4.0 OF BDS**

(To be submitted by Bidder alongwith the Techno-Commercial Bid)

Ref. :

Date :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

1.0 I, Mr. (CEO of the Company / CFO of the Company)* declare that M/s.
..... (Name of the Holding Company) is the Holding Company of M/s.
..... (Name of the Bidder).

2.0 I hereby confirm and undertake that the unaudited unconsolidated financial statements
submitted in respect of the bidder as part of the bid reference no. dated
.....have been considered for the purposes of the finalisation of Consolidated Financial
Statements of the Holding Company as part of the Annual Reports.

3.0 I further, certify that the figures in the unaudited unconsolidated financial statements are true
and correct and same have been duly reflected in the audited consolidated financial statements and
/ or Annual Report of the Holding Company.

Yours faithfully

(Signature)

Date : (Name & Designation).....

Place : (Name of the Holding Company)

(Seal of Holding Company)

Note : *Strike off whichever is not applicable.

PROFORMA OF LETTER OF UNDERTAKING

(TO BE FURNISHED ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**(To be executed by the Holding Company Supported by
Board Resolution and submitted by the Bidder alongwith the Techno-Commercial Bid,
Applicable to the Bidder for meeting the stipulated Financial Qualifying
Requirement as per Clause 2.1.1 of Item No. 4.0 of Bid Data Sheet)**

Ref. :

Date :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

1.0 We, M/s..... declare that we are the holding company of M/s
..... (Name of the Bidder) and have controlling interest therein.

M/s. (Name of the Bidder) proposes to submit the bid for the package
..... (Name of the package) for (Name of the Project) under bid
reference no. dated and have sought financial strength and support
from us for meeting the stipulated Financial Qualifying Requirement as per Clause 2.1.1 of Item 4.0
of Bid Data Sheet.

2.0 We hereby undertake that we hereby pledge our unconditional & irrevocable financial support
for the execution of the said package to M/s. (Name of the Bidder), in case
they are awarded the Contract for the said package, at the end of the bidding process. We further
agree that this undertaking shall be without prejudice to the various liabilities that M/s
..... (Name of Bidder) would be required to undertake in terms of the Contract
including the Performance Security as well as other obligations of the Bidder/Contractor.

3.0 This undertaking is irrevocable and unconditional, and shall remain in force till the
successful execution and performance of the entire contract and/or till it is discharged by
Employer.

4.0 We are herewith enclosing a copy of the Board Resolution in support of this undertaking.

Yours faithfully

(Signature of Authorised Signatory
on behalf of the Holding Company)

Witness :

(1)

(Name & Designation).....

(Name of the Holding Company).....

(2)

(Seal of the Holding Company).....

Date:

Place:

**PROFORMA OF CERTIFICATE FROM THE CEO/CFO OF THE
COMPANY IN ACCORDANCE WITH ITEM NO. 2.1.3 OF BDS**

(To be submitted by Bidder alongwith the Techno-Commercial Bid)

Ref. :

Date :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

1.0 I, Mr. (CEO of the Company / CFO of the Company)* confirm and undertake that the Financial results of the company for the preceding financial year to be submitted in respect of the bidder as part of the bid reference no. dated are under audit as on the date of Techno-Commercial Bid Opening for Package for and the certificate from the practicing chartered accountant certifying the financial parameters for the preceding financial year is not available.

Yours faithfully

(Signature)

Date : (Name & Designation).....

Place : (Name of the Company)

(Seal of Company)

Note : *Strike off whichever is not applicable.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION (2x800 MW)**

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(Details pertaining to Financial Criteria of each Collaborator/Associate as per Clause 2.2.0 of Item No. 4.0 of Bid Data Sheet)

A) To satisfy the requirements specified in Clause 2.2.0 of Item No. 4.0 of Bid Data Sheet, Section-III, We give below the following details:

- a) In terms of Clause No. 2.2.1, we confirm that the average annual turnover of M/s [our Associate/Collaborator as per applicable clause / Note] in the preceding three financial years as on date of Techno-commercial bid opening is not less than

Collaborator(s) / Associate(s)	Applicable clauses	Required annual turnover in Million INR or in equivalent Foreign currency
QSGM	1.2.1, 1.6.2(a)(ii)	INR 2095 Million (Rupees Two Thousand Ninety Five Million Only)
	1.1.2(c), 1.3.1(a), 1.3.1(b), 1.4.1(a), 1.4.1(b), 1.5.1(a), 1.5.1(b), 1.6.2 (a)(i)/(iii)/(iv), 1.7.2	INR 8141 Million (Rupees Eight Thousand One Hundred Forty One Million only)
QSTGM	1.2.1, 1.2.3, 1.6.2(a)(ii)	INR 2095 Million (Rupees Two Thousand Ninety Five Million Only)
	1.1.2(c), 1.3.1(a), 1.3.1(b), 1.4.1(a), 1.4.1(b), 1.5.1(a), 1.5.1(b), 1.6.2(a)(i)/(iii)/(iv), 1.7.2	INR 2838 Million (Rupees Two thousand Eight hundred Thirty Eight Million only)
Indian Steam Generator and Steam Turbine generator manufacturer (if steam generator is being sourced as per clause 1.6.2(a)(ii))	1.6.2(a)(ii)	INR 8141 Million (Rupees Eight thousand One hundred Forty One Million only)
Indian Steam Generator and Steam Turbine generator manufacturer (if steam turbine generator is being sourced as per clause 1.6.2(a)(ii))	1.6.2(a)(ii)	INR 2838 Million (Rupees Two thousand Eight hundred Thirty Eight Million only)
Subsidiary Company / JV Company of QSGM	1.1.2(c), 1.3.1(b), 1.4.1(b), 1.5.1(b), 1.6.2(a) (i)/(iii)/(iv), 1.7.2	INR 8141 Million (Rupees Eight Thousand One Hundred Forty One Million only)

Subsidiary Company / JV Company of QSTGM	1.1.2(c),1.3.1(b), 1.4.1(b), 1.5.1(b), 1.6.2(a) (i)/(iii)/(iv), 1.7.2	INR 2838 Million (Rupees Two thousand Eight hundred Thirty Eight Million only)
Separate Generator Manufacturer	1.1.4, 1.2.3, 1.3.3, 1.4.3, 1.5.3, 1.6.4, 1.7.4	INR 2095 Million (Rupees Two Thousand Ninety Five Million Only)
Holding Company as QSGM	Notes for clause 1.0.0 (4)	INR 8141 Million (Rupees Eight Thousand One Hundred Forty One Million only)
Holding Company as QSTGM	Notes for clause 1.0.0 (4)	INR 2838 Million (Rupees Two thousand Eight hundred Thirty Eight Million only)
Technology Owner (Licensor to QSGM)	Notes for clause 1.0.0 (5)	INR 2095 Million (Rupees Two Thousand Ninety Five Million Only)

In support of above, we are enclosing Audited Financial Statements.

Sl. No.	Financial Year	Amount in Rs.
1.	2020 - 2021	
2.	2021 – 2022	
3.	2022 – 2023	
4.	Average Annual Turnover for the preceding three (3) Financial Years as on date of Techno- Commercial Bid Opening.	
5.	We have enclosed Audited financial statements for the last 3 financial years at	Annexure to this Attachment
6.	Since we are not able to furnish the audited financial statements of our Collaborator / Associate on stand alone entity basis, we are submitting the following documents for substantiation of their Qualification : (a) Copies of unaudited unconsolidated financial statements of our Collaborator / Associate alongwith copies of the audited consolidated financial statements of the Holding Company of our Collaborator / Associate for the last 3 years enclosed at Annexure..... to this Attachment. (b) Certificate from the CEO/CFO of the Holding company stating that the unaudited unconsolidated financial statements form part of the consolidated Annual Report of the Holding Company, is enclosed as per the format at Appendix-A to this Attachment.	Enclosed at Annexure

7.	Audited results for the last financial year as on the date of Techno-Commercial bid opening enclosed In case not enclosed, financial results certified by a practicing chartered accountant enclosed In case financial results certified by a practicing chartered accountant not enclosed, then Audited financial statements for FY 2019-20 also enclosed. Further, a Certificate from the CEO/CFO of our Collaborator / Associate stating that the “Financial results of company are under audit as on the date of Techno-Commercial Bid Opening and the certificate from the practicing chartered accountant certifying the financial parameters is not available”, is enclosed Annexure as per the format at Appendix-C to this Attachment.	YES*/NO* YES*/NO* Enclosed at Annexure YES*/NO* Enclosed at Annexure

- b) Since our Collaborator / Associate do not satisfy the Financial Criteria stipulated at Clause No. 2.2.1 of Item 4.0 of Bid Data Sheet, Section-III, on their Own, we give below the following details of the **Holding Company** of our Collaborator / Associate:

1. Name and Address of the Holding Company:

2. Turnover of the Holding Company with following details:

Sl.No	Financial Year	Amount in INR
a)	2020 - 2021	.....
b)	2021 – 2022	.....
c)	2022 – 2023	.....
d)	Average Annual Turnover for the preceding three (3) Financial Years as on date of Techno-Commercial Bid Opening.	.....
e)	We have enclosed audited Financial Statements for the preceding three (3) Financial years	Annexure to this Attachment

Sl. No	Description	As on last day of the preceding financial year
3.	Paid-up Share Capital of the Holding Company	.....
4.	Net Worth of the Holding Company	.....
5.	%age of Net worth to Paid-up Share Capital of the Holding Company	.....
6.	A Letter of Undertaking from the Holding Company, supported by Board Resolution of the Holding Company, pledging unconditional and irrevocable financial support to the Collaborator/Associate to honour the terms and conditions of the Deed of Joint Undertaking in case of award of the Contract to the Bidder with whom Collaborator/Associate is associated is enclosed as per the format at Appendix-B to this Attachment. A power of attorney of the person signing on behalf of holding company is also enclosed at Annexure to this Attachment.	
7.	Documentary evidence like Annual Report/Audited financial statements together with relevant schedules for the preceding financial year/ certification of financial statements from a practicing Chartered Accountant etc. in respect of holding company in support of above is enclosed at Annexure..... to this Attachment.	

8. Audited results for the last financial year as on the date of Techno-Commercial bid opening enclosed YES*/NO*
- In case not enclosed, financial results certified by a practicing chartered accountant enclosed YES*/NO*
Enclosed at Annexure
- In case financial results certified by a practicing chartered accountant not enclosed, then Audited financial statements for FY 2019-20 also enclosed. Further, a Certificate from the CEO/CFO of the Holding Company stating that the “Financial results of company are under audit as on the date of Techno-Commercial Bid Opening and the certificate from the practicing chartered accountant certifying the financial parameters is not available”, is enclosed Annexure as per the format at Appendix-C to this Attachment. YES*/NO*
Enclosed at Annexure

B) To satisfy the requirements specified in Clause 2.2.2 of Item No. 4.0 of Bid Data Sheet, Section-III, We give below the following details:

- a) We hereby confirm that net worth of our Collaborator/Associate as on the last day of the preceding financial year is Positive.

The Details are as under:

Sl. No	Description	As on last day of the preceding financial year
1.	Paid-up Share Capital	
2.	Net Worth	
3.	%age of Net worth to Paid-up Share Capital	
4.	Documentary evidence like Audited financial statements for the preceding financial year* in support of above is enclosed at Annexure to this Attachment.	
5.	Since we are not able to furnish the audited financial statements of our Collaborator / Associate on stand alone entity basis, we are submitting the following documents for substantiation of their Qualification : (a) Copies of unaudited unconsolidated financial statements of our Collaborator / Associate alongwith copies of the audited consolidated financial statements of the Holding Company of our Collaborator / Associate for the last 3 years enclosed at Annexure..... to this Attachment. Certificate from the CEO/CFO of the Holding company stating that the unaudited unconsolidated financial statements form part of the consolidated Annual Report of the Holding Company, is enclosed as per the format at Appendix-A to this Attachment.	Enclosed at Annexure

6.	Audited results for the last financial year as on the date of Techno-Commercial bid opening enclosed In case not enclosed, financial results certified by a practicing chartered accountant enclosed In case financial results certified by a practicing chartered accountant not enclosed, then Audited financial statements for FY 2019-20 also enclosed. Further, a Certificate from the CEO/CFO of our Collaborator / Associate stating that the “Financial results of company are under audit as on the date of Techno-Commercial Bid Opening and the certificate from the practicing chartered accountant certifying the financial is not available”, is enclosed Annexure.....as per the format at Appendix-C to this Attachment.	YES*/NO* YES*/NO* Enclosed at Annexure YES*/NO* Enclosed at Annexure

Notes :

- (i) Net worth means the sum total of the paid up share capital and free reserves. Free reserve means all reserves credited out of the profits and share premium account but does not include reserves credited out of the revaluation of the assets, write back of depreciation provision and amalgamation. Further any debit balance of Profit and Loss account and miscellaneous expenses to the extent not adjusted or written off, if any, shall be reduced from reserves and surplus.
- (ii) Other income shall not be considered for arriving at annual turnover.
- (iii) "Holding Company" and "Subsidiary Company" shall have the meaning ascribed to them as per Companies Act of India.
- (iv) For annual Turnover indicated in foreign currency, the exchange rate as on seven (7) days prior to the date of Techno-Commercial bid opening shall be used.
- (v) In case the bidder / collaborator(s) / associate(s) participating under Clause 1.3.0 or 1.4.0, do not meet the turnover requirement, then, the Turnover of any of the Promoters individually or all the promoters (in a combined manner) (each having Equity Stake more than 25%) of the Subsidiary Company / JV Company would be considered. Each such promoter of the Subsidiary Company / JV Company shall have to meet the Net Worth criteria individually as per clause 2.1.2 and/or 2.2.2. In such an event the Bidder would be required to furnish along with its techno-commercial bid, a Letter of Undertaking from such promoter(s), supported by Board Resolution as per the format enclosed in the bidding documents, pledging unconditional and irrevocable financial support for execution of the Contract by the Bidder in case of award.
- (vi) Bidder to submit Attachment 3A-14 in same format for all applicable Associates(s)/Collaborators separately.**

- (vii) Route 1.2.0 has not been used for the purpose of qualification in Qualifying Requirements. Wherever Clause 1.2.0, 1.2.1, 1.2.2 & 1.2.3 (as per item 4 of BDS) have been referred to either directly or indirectly in any qualification routes / financial criteria, the same should be deemed to have been omitted and qualifying requirements should be read accordingly.

**PROFORMA OF CERTIFICATE FROM THE CEO/CFO OF THE HOLDING
COMPANY IN ACCORDANCE WITH CLAUSE 2.2.3 OF ITEM NO. 4.0 OF BDS**

(To be submitted by Bidder alongwith the Techno-Commercial Bid)

Ref. :

Date :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

1.0 I, Mr. (CEO of the Company / CFO of the Company)* declare that M/s.
..... (Name of the Holding Company) is the Holding Company of M/s.
..... (Name of the Collaborator / Associate of the Bidder).

2.0 I hereby confirm and undertake that the unaudited unconsolidated financial statements
submitted in respect of M/s..... (Name of the Associate/Collaborator) as part of
the bid reference no. dated have been considered for the
purposes of the finalisation of Consolidated Financial Statements of the Holding Company as
part of the Annual Reports.

3.0 I further, certify that the figures in the unaudited unconsolidated financial statements are true
and correct and same have been duly reflected in the audited consolidated financial statements
and / or Annual Report of the Holding Company.

Yours faithfully

(Signature)

Date : (Name & Designation).....

Place : (Name of the Holding Company)

(Seal of Holding Company)

Note : *Strike off whichever is not applicable.

PROFORMA OF LETTER OF UNDERTAKING

(TO BE FURNISHED ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**(To be executed by the Holding Company Supported by
Board Resolution and submitted by the Bidder alongwith the Techno-Commercial Bid,
Applicable to the Bidder for meeting the stipulated Financial Qualifying
Requirement as per Clause 2.2.1 of Item No. 4.0 of Bid Data Sheet)**

Ref. :

Date :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

1.0 We, M/s..... declare that we are the holding company of M/s
..... (Name of the Associate/Collaborator) and have controlling interest therein.

M/s. (Name of the Bidder) proposes to submit the bid for the package
..... (Name of the package) for (Name of the Project) under
bid reference no. dated and has submitted a deed of joint
undertaking with M/s..... (Name of the Associate/Collaborator) of which we are
holding company and that M/s..... (Name of the Associate/Collaborator)
has sought financial strength and support from us for meeting the stipulated Financial Qualifying
Requirement as per Clause 2.2.1 of Item 4.0 of Bid Data Sheet.

2.0 We hereby undertake that we hereby pledge our unconditional & irrevocable financial support to
M/s (Name of the Collaborator/Associate) to honour the terms and conditions of the
Deed of Joint Undertaking in case of award of the Contract to M/s (Name of the
Bidder) with whom M/s (Name of the Collaborator/Associate) is associated. We
further agree that this undertaking shall be without prejudice to the various liabilities that M/s
..... (Name of Collaborator/Associate) would be required to undertake in terms
of the Contract including the Performance Security, security for Deed of Joint Undertaking as
well as other obligations of M/s..... (Name of the Associate/Collaborator).

- 3.0 This undertaking is irrevocable and unconditional, and shall remain in force till the successful execution and performance of the entire contract and/or till it is discharged by Employer.
- 4.0 We are herewith enclosing a copy of the Board Resolution in support of this undertaking.

Yours faithfully

(Signature of Authorised Signatory
on behalf of the Holding Company)

Witness :

(1)	(Name & Designation).....
	(Name of the Holding Company).....
(2)	(Seal of the Holding Company).....

Date:

Place:

**PROFORMA OF CERTIFICATE FROM THE CEO/CFO OF THE
COMPANY IN ACCORDANCE WITH ITEM NO. 2.2.3 OF BDS**

(To be submitted by Bidder alongwith the Techno-Commercial Bid)

Ref. :

Date :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

1.0 I, Mr. (CEO of the Company / CFO of the Company)* confirm and undertake that the Financial results of the company for the preceding financial year to be submitted in respect of M/s (Name of Collaborator/Associate) of M/s (Name of the bidder) as part of the bid reference no. dated are under audit as on the date of Techno-Commercial Bid Opening for Package for and the certificate from the practicing chartered accountant certifying the financial parameters for the preceding financial year is not available.

Yours faithfully

(Signature)

Date : (Name & Designation).....

Place : (Name of the Company)

(Seal of Company)

Note : *Strike off whichever is not applicable.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

**[DECLARATION REGARDING CAPACITY & CAPABILITY
OF ASSOCIATE/ COLLABORATOR (if applicable)] (To be
submitted by the Bidder)**

Ref. :

Date:

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Sirs,

We, M/s (Name of the Bidder) has submitted our Bid along with M/s
....., our Associate/Collaborator for EPC PACKAGE FOR **KODERMA THERMAL
POWER STATION (2X800MW)** as per the provisions of the Bidding Documents.

We hereby confirm that we have carried out a comprehensive assessment of the capacity and capability of our
following Associate(s)/Collaborator(s) for EPC PACKAGE FOR **KODERMA THERMAL POWER STATION
(2X800MW)** :-

1)

2)

.

.

We confirm that our aforesaid Associate(s)/Collaborator(s) have sufficient capacity and capability to execute their
respective scopes of work as per the provisions of the Bidding Documents/Contract.

Yours faithfully

(Signature of Authorized Signatory) (Name &
Designation).....
(Name of the Bidder).....
(Seal of the Bidder).....

*** Bidder to necessarily fill and submit the above Declaration for the QR Route through which the Bidder is
getting qualified (as applicable).**

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(Financial Capacity Status of Bidder and/or wherever applicable, Qualified Steam Generator Manufacturer, Qualified Steam Turbine Generator Manufacturer, Promoters of Indian Subsidiary Company/Promoters of Indian Joint Venture (JV) Company, as applicable)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

- A) Orders in Hand
- i) Total value of Contracts
- ii) Value of work completed
out of above value
up to March' 2023
- iii) Value of anticipated
work to be done
in the following
Financial Years :
- 2023 – 2024
- 2024 – 2025
- 2025 – 2026
- 2026 – 2027
- 2027-- 2028
-

B) Bidder's assessment of maximum negative cash flow (fund requirement) at any point of time between Notification of Award and completion of Contract based on specified terms of payment and this expenditure plan for equipment being offered by bidder for this package.

C)	Arrangement to meet the above fund requirement	Own Funds	Credit	Others	Total

D) Gross Turnover of Company during :

Year ending - March 2019

Year ending - March 2020

Year ending - March 2021

Year ending - March 2022

Year ending - March 2023

E) Balance Sheet & Profit and Loss Account duly certified by a Chartered Accountant for the last 5 years is to be submitted

Enclosed at Annexure:-----
to this Attachment-3B

- F) Declaration by Bankers or the Chartered Accountant regarding:
- | | | |
|------|---|---|
| i) | Line of Credit | Enclosed at Annexure:-----
to this Attachment-3B |
| ii) | Deferred payment limits | Enclosed at Annexure:-----
to this Attachment-3B |
| iii) | Fixed Deposits | Enclosed at Annexure:-----
to this Attachment-3B |
| iv) | Movable Property
Hypothecation.
(Please state the present
utilization status also) | Enclosed at Annexure:-----
to this Attachment-3B |
- G) Information regarding any current litigation in which the Bidder is involved, the parties concerned, the disputes and the disputed amount if any.
- Enclosed at Annexure:-----
to this Attachment-3B

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

Note : 1. The above attachment shall be filled-up by the bidder separately for **himself** and Qualified Steam Generator Manufacturer, Qualified Steam Turbine Generator Manufacturer, Promoters of Indian Subsidiary Company/Promoters of Indian Joint Venture (JV) Company, as applicable in his bid.

2. Continuation sheets of like size and format, may be used and annexed to this schedule if required.

3. The financial details to be furnished by the bidder in this Attachment-3B shall be same as details furnished in Attachment-3A12/Attachment-3A13.

- F) Declaration by Bankers or the Chartered Accountant regarding:
- | | | |
|------|---|---|
| i) | Line of Credit | Enclosed at Annexure:-----
to this Attachment-3B |
| ii) | Deferred payment limits | Enclosed at Annexure:-----
to this Attachment-3B |
| iii) | Fixed Deposits | Enclosed at Annexure:-----
to this Attachment-3B |
| iv) | Movable Property
Hypothecation.
(Please state the present
utilization status also) | Enclosed at Annexure:-----
to this Attachment-3B |
- G) Information regarding any current litigation in which the Bidder is involved, the parties concerned, the disputes and the disputed amount if any.
- Enclosed at Annexure:-----
to this Attachment-3B

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

Note : 1. The above attachment shall be filled-up by the bidder separately for **himself** and Qualified Steam Generator Manufacturer, Qualified Steam Turbine Generator Manufacturer, Promoters of Indian Subsidiary Company/Promoters of Indian Joint Venture (JV) Company, as applicable in his bid.

2. Continuation sheets of like size and format, may be used and annexed to this schedule if required.

3. The financial details to be furnished by the bidder in this Attachment-3B shall be same as details furnished in Attachment-3A12/Attachment-3A13.

**EPC PACKAGE FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(Details of Design, Engineering, Manufacturing and Testing Capabilities of Bidder and/or wherever applicable, Qualified Steam Generator Manufacturer, Qualified Steam Turbine Generator Manufacturer, Promoters of Indian Subsidiary Company/Promoters of Indian Joint Venture (JV) Company, as applicable)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

- (1) We hereby confirm that we do not anticipate any change in ownership during the proposed period of execution of work (if such a change is anticipated, the scope and effect thereof shall be defined). The relevant document for same is enclosed at Annexure-----to the Attachment-3C.

It is clearly understood that the bid is submitted for consideration of award on the strength of the credential/experience of the bidder and executants of Deed of Joint Undertakings and Letter of Undertakings as specified in the Qualifying Requirements of the subject tender.

We confirm that in case of any change in our ownership, the new/successor entity shall honour all our obligations under the Contract for the subject package.

NOTE: The above shall be filled up and signed separately by the bidder itself and each of the executants of Deed of Joint Undertakings and Letter of Undertakings.

- (2) Furnish adequate detailed write up on

(i)	Design and Engineering Organization and Facilities/ Capabilities.	:	Enclosed at Annexure to this Attachment-3C
(ii)	Manufacturing & Testing Organization and Facilities available.	:	Enclosed at Annexure to this Attachment-3C

(iii)	Field Organization and resources for Erection, Civil and Structural works, Testing & Commissioning, etc.	:	Enclosed at Annexure to this Attachment-3C
(iv)	Quality Assurance Organisation and Capabilities for Construction, Engg., Manufacturing & Field Installation	:	Enclosed at Annexure to this Attachment-3C
(v)	Established Project Management	:	Enclosed at Annexure to this Attachment-3C
(vi)	Details of Man power / Division of Company	:	Enclosed at Annexure to this Attachment-3C

Date :	(Signature).....
Place :	(Printed Name).....
	(Designation).....
	(Common Seal).....

- Note :
- 1 The above Attachment shall be filled up by the bidder separately for **himself** and Qualified Steam Generator Manufacturer, Qualified Steam Turbine Generator Manufacturer, Promoters of Indian Subsidiary Company/Promoters of Indian Joint Venture (JV) Company, as applicable, in his bid.
 2. Continuation sheets of same size and format shall be added by the Bidder.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**

**BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB
(Details of Manufacturing Capacities and Plant Loading
of the Bidder and Associate/Collaborator wherever applicable)**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

We hereby furnish below the details of our installed manufacturing capacities (in MW/MT) and work in hand to establish spare capacity for completion of work under this Package.

Item	2023 - 2024			2024 - 2025			2025-2026			2026-2027			2027-2028		
	Bidder's Shop	Collabo- rator/ Asso- ciate's Shop	Sub Con- trac- tor's Shop	Bidder's Shop	Collabo- rator/ Asso- ciate's Shop	Sub Con- trac- tor's Shop	Bidder's Shop	Collabo- rator/ Asso- ciate's Shop	Sub Con- trac- tor's Shop	Bidder's Shop	Collabo- rator/ Asso- ciate's Shop	Sub Con- trac- tor's Shop	Bidder's Shop	Collabo- rator/ Asso- ciate's Shop	Sub Con- trac- tor's Shop

**I. STEAM GENERATOR
& AUXILIARIES**

**A. Production
Capacity as
installed for**

1. Steam generator

[illegible]

Item	2023 - 2024			2024-2025			2025-2026			2026-2027			2027-2028		
	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-contractor's Shop

tation and
control system

11. Any other
item not
listed above
(Bidder
to specify)

**B Firm Orders
in Hand Upto.....
for**

1. Steam
generator
& auxiliaries
2. High Pressure
and critical
steam piping
3. Coal Pul-
verisers
4. Mill Reject
Handling
System
5. Other EOT
Cranes &
hoisting
equipment
6. Passenger
and goods

[illegible]

Item	2023 - 2024			2024-2025			2025-2026			2026-2027			2027-2028		
	Bidder's Shop	Collabo-rator/Asso-ciate's Shop	Sub-Con-trac-tor's Shop	Bidder's Shop	Collabo-rator/Asso-ciate's Shop	Sub-Con-trac-tor's Shop	Bidder's Shop	Collabo-rator/Asso-ciate's Shop	Sub-Con-trac-tor's Shop	Bidder's Shop	Collabo-rator/Asso-ciate's Shop	Sub-Con-trac-tor's Shop	Bidder's Shop	Collabo-rator/Asso-ciate's Shop	Sub-Con-trac-tor's Shop

critical
steam piping

3. Coal Pul-verisers

[illegible]

Item	2023 - 2024			2024-2025			2025-2026			2026-2027			2027-2028		
	Bidder's Shop	Collaborator/Asso- ciate's Shop	Sub- Contractor's Shop	Bidder's Shop	Collaborator/Asso- ciate's Shop	Sub- Contractor's Shop	Bidder's Shop	Collaborator/Asso- ciate's Shop	Sub- Contractor's Shop	Bidder's Shop	Collaborator/Asso- ciate's Shop	Sub- Contractor's Shop	Bidder's Shop	Collaborator/Asso- ciate's Shop	Sub- Contractor's Shop

D. Orders Expected for

1. Steam generator & auxiliaries
2. High Pressure and critical steam piping
3. Coal Pulverisers
4. Mill Reject Handling System
5. Other EOT Cranes & hoisting equipment
6. Passenger and goods elevators
7. Air compressors
8. Power & Control Cables
9. LT Switch-

[illegible]

[illegible]

Item	2023 - 2024			2024-2025			2025-2026			2026-2027			2027-2028		
	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop
2.	High Pressure and critical steam piping														
3.	Coal Pulverisers														
4.	Mill Reject Handling System														
5.	Other EOT Cranes & hoisting equipment														
6.	Passenger and goods elevators														
7.	Air compressors														
8.	Power & Control Cables														
9.	LT Switchgear/MCC														
10.	DDCMIS and other instrumentation and control system														

[illegible]

[illegible]

[illegible]

Item	2023 - 2024			2024-2025			2025-2026			2026-2027			2027-2028		
	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop

C. Balance Capacity Available

1. Turbine
2. Generator
3. Condenser
4. CEP
5. Feed Water Heaters
6. Deaerator
7. BFP
8. HP/LP Bypass System
9. Others

D. Orders Expected

1. Turbine
2. Generator
3. Condenser
4. CEP
5. Feed Water Heaters

[illegible]

Item	2023 - 2024			2024-2025			2025-2026			2026-2027			2027-2028		
	Bidder's Shop	Collaborator/Associate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Associate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Associate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Associate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Associate's Shop	Sub-contractor's Shop
2.	Generator														
3.	Condenser														
4.	CEP														
5.	Feed Water Heaters														
6.	Deaerator														
7.	BFP														
8.	HP/LP Bypass System														
9.	Others														
G.	Alternative arrangements to make up for this shortfall														
1.	Turbine														
2.	Generator														
3.	Condenser														
4.	CEP														
5.	Feed Water Heaters														
6.	Deaerator														
7.	BFP														

Item	2023 - 2024			2024-2025			2025-2026			2026-2027			2027-2028		
	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-Contractor's Shop
8.	HP/LP Bypass System														
9.	Others														
III.	PLANT UTILITIES (Compressed Air System, A/C and Ventilation System, Fire Detection & Protection System)														
A.	Production Capacity as installed														
B.	Firm Orders in Hand Upto														
C.	Balance Capacity Available														
D.	Orders Expected														
E.	Work Load Expected for this Contract														
F.	Shortfall, if any														
G.	Alternative arrangements to make up for this shortfall														
	(Above items A to G, are to filled separately for each equipment / system covered under Plant utilities mentioned above)														

Item	2023 - 2024			2024-2025			2025-2026			2026-2027			2027-2028		
	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-contractor's Shop	Bidder's Shop	Collaborator/Asso-ciate's Shop	Sub-contractor's Shop
IV. ASH HANDLING PLANT															
A.	Production Capacity as installed														
B	Firm Orders in Hand Upto.....														
C.	Balance Capacity Available														
D.	Orders Expected														
E.	Work Load Expected for this Contract														
F.	Shortfall, if any														
G.	Alternative arrangements to make up for this shortfall														
V. MILL REJECT HANDLING SYSTEM															
A.	Production Capacity as installed														
B	Firm Orders in Hand Upto.....														
C.	Balance Capacity Available														
D.	Orders Expected														
E.	Work Load Expected for this Contract														

Item	2023 - 2024			2024-2025			2025-2026			2026-2027			2027-2028		
	Bidder's Shop	Collaborator/Associate's Shop	Subcontractor's Shop	Bidder's Shop	Collaborator/Associate's Shop	Subcontractor's Shop	Bidder's Shop	Collaborator/Associate's Shop	Subcontractor's Shop	Bidder's Shop	Collaborator/Associate's Shop	Subcontractor's Shop	Bidder's Shop	Collaborator/Associate's Shop	Subcontractor's Shop
F.	Shortfall, if any														
G.	Alternative arrangements to make up for this shortfall														
VI.	POWER CYCLE PIPING SYSTEM														
A.	Production Capacity as installed														
B	Firm Orders in Hand Upto.....														
C.	Balance Capacity Available														
D.	Orders Expected														
E.	Work Load Expected for this Contract														
F.	Shortfall, if any														
G.	Alternative arrangements to make up for this shortfall														
VII.	ELECTRICAL														
A.	Production Capacity as installed														
B	Firm Orders in Hand Upto.....														
C.	Balance Capacity Available														

Item	2023 - 2024			2024-2025			2025-2026			2026-2027			202-2028		
	Bidder's Shop	Collabo- rator/ Asso- ciate's Shop	Sub Con- trac- tor's Shop	Bidder's Shop	Collabo- rator/ Asso- ciate's Shop	Sub Con- trac- tor's Shop	Bidder's Shop	Collabo- rator/ Asso- ciate's Shop	Sub Con- trac- tor's Shop	Bidder's Shop	Collabo- rator/ Asso- ciate's Shop	Sub Con- trac- tor's Shop	Bidder's Shop	Collabo- rator/ Asso- ciate's Shop	Sub Con- trac- tor's Shop

D. Orders Expected

**E. Work Load Expected
for this Contract**

F. Shortfall, if any

**G. Alternative arrange-
ments to make up
for this shortfall**

**VIII. STATION CONTROL &
INSTRUMENTATION**

**A. Production Capacity
as installed**

**B. Firm Orders in
Hand Upto.....**

**C. Balance Capacity
Available**

D. Orders Expected

**E. Work Load Expected
for this Contract**

F. Shortfall, if any

**G. Alternative arrange-
ments to make up
for this shortfall**

Date	:	(Signature).....
Place	:	(Printed Name).....
		(Designation).....
		(Common Seal).....

Note : Continuation sheets of like size and format may be used as per Bidder's requirement and shall be annexed to this Attachment.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II
(2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800
MW)/EPC/IPHB**

**ATTACHMENT - 3E
Page 1 of 1**

(Present Order Book Position)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Sl. No.	Client	Order Value	No. of Units & Unit size	Date of Order	Present Status		% work completed Engg./ Manufacturing/ Erection/ Structural/ Civil	Completion of Supply		Completion of Erection, Testing & Commissioning		Reasons for Delay (if any)
					-----			-----		-----		
					Sch- edule	Actual/ Expec- ted		Sch- edule	Actual/ Expec- ted	Sch- edule	Actual/ Expected	
					-----						-----	

Date : (Signature).....
Place : (Printed Name).....
(Designation).....
(Common Seal).....

- Note :** 1. The above attachment shall be filled up by the bidder separately for **himself** and Qualified Steam Generator Manufacturer, Qualified Steam Turbine Generator Manufacturer, Promoters of Indian Subsidiary Company/Promoters of Indian Joint Venture (JV) Company, as applicable, in his bid.
2. Continuation sheets of like size and format may be used as per Bidder's requirement and shall be annexed to this Attachment.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II
(2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800
MW)/EPC/IPHB**

(Past Performance Data)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Details of Similar Plant & Equipments (Steam Generator & Auxiliaries and/or Steam Turbine Generator & Auxiliaries)/ Units Supplied/Commissioned in last ten years/ Projects executed on EPC basis in last ten years

Sl. No.	Client Name & Address	Date of Order	Unit Size & No. of Units	Date of Completion of Supply		Date of Completion of Erection, Testing & Commissioning		Order Value	Reasons for Delay (if applicable)
				Sche- dule	Actual	Schedule	Actual		

Date : (Signature).....
Place : (Printed Name).....
(Designation).....
(Common Seal).....

- Note : 1. The above Attachment shall be filled up by the bidder separately for himself and Qualified Steam Generator Manufacturer, Qualified Steam Turbine Generator Manufacturer, Promoters of Indian Subsidiary Company/Promoters of Indian Joint Venture (JV) Company, as applicable, in his bid.
2. Continuation sheets of like size & format may be used if required and annexed to this Attachment

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II
(2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800
MW)/EPC/IPHB**

**ATTACHMENT - 3G
Page 1 of 1**

(Data regarding Key Construction Personnel)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

The qualification and experience of key constructional personnel proposed for administration and execution of the Contract at site are as follows:

Sl.No.	Name	Qualification	Position/Designation	Experience

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

- Note : 1. The above Attachment shall be filled up by the bidder separately for himself and Qualified Steam Generator Manufacturer, Qualified Steam Turbine Generator Manufacturer, Promoters of Indian Subsidiary Company/Promoters of Indian Joint Venture (JV) Company, as applicable, in his bid.
2. Continuation sheets of like size & format may be used if required and annexed to this Attachment

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II
(2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800)
MW)/EPC/IPHB**

**ATTACHMENT - 3H
Page 1 of 1**

(Manpower Loading Data)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

We declare that our manpower loading during execution of the Contract will be as follows :

No. of months from the date of Notification of Award	1	2	3	4	5	6	7	8	9	10.....	52

Labour (Category)

Date	:	(Signature).....
Place	:	(Printed Name).....
		(Designation).....
		(Common Seal).....

- Note :
1. The above Attachment shall be filled up by the bidder separately for himself and Qualified Steam Generator Manufacturer, Qualified Steam Turbine Generator Manufacturer, Promoters of Indian Subsidiary Company/Promoters of Indian Joint Venture (JV) Company, as applicable, in his bid.
 2. Continuation sheets of like size & format may be used if required and annexed to this Attachment
 3. List of Category of Labour will be given by the Bidder.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB
(Deed of Joint Undertaking)**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

- 1.0 We confirm having enclosed at Annexure to this Attachment-3I, the requisite Deed(s) of Joint Undertakings.
- 2.0 Further, we confirm that in case of Award of Contract, our Promoter(s)/Collaborator(s)/ other executants of aforesaid Deed(s) of Joint Undertaking will furnish the requisite Bank Guarantee(s) as mentioned in the respective Deed(s) of Joint Undertaking.

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

**EPC PACKAGE
FOR**

**KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(DETAILS REGARDING PROJECT MANAGEMENT ORGANISATION)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

- 1.0 In line with Clause No. ITB 8.1.2 (a), we furnish below the brief write up in support of our established project management organization.

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

* Bidder to use their own format for above details.

**EPC PACKAGE
FOR**

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Bidder to attach documentary evidence establishing in accordance with Clause No. 2.0 (d) of Bid Form that the Facilities offered are eligible Facilities and conform to the Bidding Documents.

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(List of Special Maintenance Tools & Tackles)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sir,

We are furnishing below the list of special maintenance tools & tackles for various system/equipment for Steam Generator & Auxiliaries, Steam Turbine Generator & Auxiliaries and all other systems as per the Scope of Work of the subject package. The prices for these tools & tackles shall be included in the lump sum bid price quoted in Envelope-II (Price) Bid. We further confirm that the list of special maintenance tools & tackles includes all the items specifically mentioned in scope of supply & services covered in Section-VI, Technical Specifications of bidding documents.

Notwithstanding what is stated above we further confirm that any additional special maintenance tools and tackles, required for the equipment under this package shall be furnished by us at no extra cost to the Employer.

S.No.	Description of each System/Equipment	Description of Tools & Tackles	Unit	Qty.

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

Note : Continuation sheets of like size and format may be used as per Bidder's requirement and shall be annexed to this Attachment.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II
(2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800
MW)/EPC/IPHB**

**ATTACHMENT - 5
PAGE 1 OF 1**

(Details of Proposed Sub-contractors/Sub-Vendors)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

The details of all items of services or supply which we propose subletting giving details of the name and nationality of the proposed Sub-Contractor/Sub Vendor for each item (system-wise) are given below : -

S.No.	Supply/Service Item-wise (for each system)	Unit	Qty.	Name, Address & Nationality of proposed Sub-Contractor/ Sub-Vendor

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal)

Note : **Any sub-contractor/ system supplier/ sub-vendor/ system integrator (as mentioned here, in addition to Indicative Vendor List (as per Sub section-E-60, Part-B (Quality Assurance), Section-VI part of the bid document) by the bidder except sub-contractor/ system supplier/ sub- vendor/ system integrator from land border sharing countries shall be treated under DR (Details Required) category. Bidder may refer Annexure-VIII of GTR (Part-C), Section-VI (Technical Specifications) of bidding documents, while filling the details in respect of Sub-Contractors/ Sub-Vendors/ Sub-Suppliers**

Continuation sheets of like size and format may be used as per Bidder's requirement and shall be annexed to this Attachment.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(NO DEVIATION CERTIFICATE)

Bidder's Name and Address: To

Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department,
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

- 1.0 With reference to our Bid Proposal No..... dated.....for **EPC PACKAGE FOR KODERMA THERMAL POWER STATION PHASE-II (2x800MW); BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**, we hereby confirm that we comply with all terms, conditions and specifications of the Bidding Documents read in Conjunction with Amendment(s)/Clarification(s)/Addenda/Errata (if any) issued by the Employer prior to opening of Bids and the same has been taken into consideration while making our Bid and we declare that we have not taken any deviation in this regard.
- 2.0 By submission of above Attachment (No Deviation Certificate), we hereby confirm our compliance to all provisions of Bidding Documents including but not limited to the following important provisions:

(a) FULL COMPLIANCE TO ALL PROVISIONS OF BIDDING DOCUMENT:

We understand that no deviation, whatsoever, is permitted by Employer to any provision of Bidding Documents. We have taken into consideration all terms and conditions of the Bidding documents while making our Bid proposals and quoting prices. We, hereby certify our compliance to the complete Bidding Documents by submitting above attachment.

Further, it is understood that submission of above attachment shall be considered as Bidder's confirmation that any deviation to the any provision found anywhere in their Bid Proposal, implicit or explicit, shall stand unconditionally withdrawn, without any cost implication whatsoever to the Employer, failing which the bid shall be rejected and bid security shall be forfeited.

(b) FULL COMPLIANCE ON QUALIFYING REQUIREMENTS.

We, hereby confirm to the following conditions:

- (a) The number of reference Plants/Orders quoted by us in Attachment-3A of the bid, for establishing compliance to the specified Qualifying Requirement (QR), are in accordance with the provision specified in Bid Data Sheet (BDS).

- (b) The reference Plants/ Orders declared, shall only be considered for evaluation/ establishing compliance to Qualifying Requirement (QR). Any reference Plants/ Orders declared more than as specified in Bid Data Sheet (BDS) shall not be considered for evaluation/establishing compliance to Qualifying requirements.
- (c) No change or substitution in respect of reference Plants / Orders for meeting the specified Qualifying Requirement (QR) shall be offered by the bidder.

We have furnished the details of the past experiences based on which selection is to be made as per format enclosed in the bidding documents for the same and enclosed relevant documents like copies of authentic work order, completion certificate, agreements etc. supporting the details/data provided in the format. We understand that No claims without supporting documents shall be accepted in this regard. We understood that if any of the reference work pertains to the Contract(s)/Works executed by Bidder for Employer/NTPC in the past then in respect of such Contract(s)/ Works, Bidder shall not be required to enclose Client Certificate (s) along with its bid.

(c) FRAUD PREVENTION POLICY OF EMPLOYER

In accordance of ITB clause 38.0, we (Bidder) along with our associate/ collaborators/ sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to the Fraud Prevention Policy of employer attached at **Annexure-VII to Special Conditions of Contract (SCC)** of the Bidding Documents and shall immediately apprise Employer about any fraud or suspected fraud as soon as it comes to their notice. If in terms of above policy, it is established that the bidder/his representatives have committed any fraud while competing for this contract then the bid security of the bidder shall be forfeited.

We hereby confirm that we have read the contents of the Fraud Prevention Policy as attached at **Annexure-VII to Special Conditions of Contract (SCC)** of the Bidding Documents and undertake that we along with our associate/collaborator/ subcontractors / sub vendors / consultants / service providers shall strictly abide by the provisions of the Fraud Prevention Policy.

(d) Debarment Policy

We hereby confirm the following conditions:

- (1) bidder has read the contents of the Debarment Policy of DVC attached with this Bidding Document and agrees to abide by this policy.

Further, in terms of requirement under Banning Practices we hereby declare that in case where the business firm happens to have been banned / suspended by 'Any establishment of DVC' / 'Ministry of

Power- Govt. of India' / 'Department of Expenditure (DoE), Ministry of Finance (MoF) – as displayed on Central Public Procurement Portal(CPPP)' and the ban/ suspension is still in force on the date of bid opening of techno-commercial bid or on the date of issuance of LOA/PO/Work Order /LOA-cum-Work Order, the offer of the business firm /authorized agent/distributor/dealer/affiliates shall not be considered for all establishments of DVC.

(2) We further confirm as under:

that if at any point subsequent to award of Contract, the declarations given above are found to be incorrect, DVC shall have the full right to terminate the Contract and take any action as per applicable laws for breach of contract including forfeiture of Bid Security/Performance Bank Guarantee.

(e) ITB CLAUSE “RESTRICTIONS ON PROCUREMENT FROM A BIDDER OF A COUNTRY WHICH SHARES A LAND BORDER WITH INDIA”

We, hereby certify our compliance to ITB Clause “Restrictions on procurement from a Bidder of a country which shares a land border with India” by submission of above Attachment-6.

Further, we confirm that Bidder has read and understood the ITB Clause regarding “Restrictions on procurement from a Bidder of a country which shares a land border with India” and our bid is in compliance to this clause.

In case it is established that Bidder has provided any false information in pursuance of the aforesaid ITB Clause, while competing for this contract, then its bid shall be rejected and bid security shall be forfeited.

In case of a successful bidder, if it is established that the Bidder has not complied with terms of aforesaid ITB Clause, during execution of contract, this would be considered as fraudulent practices as mentioned in “**Debarment Policy**” and shall be dealt accordingly.

(f) ALL PROVISIONS OF THE INTEGRITY PACT

We hereby confirm to have read, understood and unconditionally accept & commit to all the contents, terms, conditions and undertakings mentioned in the Integrity Pact which has been pre-signed by the Employer and enclosed with the Bidding Documents. We understand that where the Joint Venture(s) / Consortium are permitted to participate in the bid pursuant to ITB Clause 8.1.2(a), Submission of above attachment-6 by bidder shall mean that all the JV Partner(s)/ Consortium members have read, understood and unconditionally accept & commit to all the contents, terms, conditions and undertakings mentioned in the Integrity Pact which has been pre-signed by the Employer and enclosed with the Bidding Documents.

By submission of Attachment-6: NO DEVIATION CERTIFICATE, Integrity Pact shall be considered signed by the Bidder / JV Partner(s)/ Consortium members and the same shall come into force from the date of submission of bid.

- 3.0 We further confirm that any deviation, variation or additional condition etc. or any mention, contrary to Bidding Documents and its Amendment(s)/ Clarification(s)/Addenda/Errata (if any) as mentioned at 1.0 above found anywhere in our Bid, implicit or explicit, shall stand unconditionally withdrawn, without any cost implication whatsoever to Employer, failing which the bid security shall be forfeited.

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Company Seal).....

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II
(2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800
MW)/EPC/IPHB**

(Details in respect of Local Agent)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sir,

We furnish below the following information in respect of our Local Agent :

(i) Name and Address of the Local Agent

.....
.....
.....

(ii) Services to be rendered by the Local Agent

.....
.....
.....

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

**EPC PACKAGE
FOR**

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(Category-II and Category-III Guarantees / Capabilities)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear sir,

We declare that the ratings, capacities and performance figures of the equipment/system furnished by us under this package are to be complied/ demonstrated by us. We further declare that in the event of any deficiencies in meeting the above parameters in respect of the characteristics mentioned below as established after conducting the guarantee test, you may at your discretion:

- (i) Reject the equipment/system and recover payment already made (For Category- II guarantees) as specified in Part-A, Section-VI (Technical Specification) of bidding document
- (ii) Accept the equipment/system after assessing the deficiency and effecting recovery from the contract price (For Category-III guarantees) as specified in Part-A, Section-VI (Technical Specification) of bidding document.

A. Category-II Guarantee

I. Noise

All the plant, equipment and systems covered under this specification shall perform continuously without exceeding the noise level over the entire range of output and operating frequency specified in General Technical Requirement Part-C of Section-VI of the Technical Specifications.

Noise level measurement shall be carried out using applicable and internationally acceptable standards. The measurement shall be carried out with a calibrated integrating sound level meter meeting the requirement of IEC 61672-1 and IEC 61672-2 (latest edition).

.....

Sound pressure shall be measured all around the equipment at a distance of 1.0m horizontally from the nearest surface of any equipment/machine and at a height of 1.5m above the floor level in

elevation.

A minimum of 6 points around each equipment shall be covered for measurement. Additional measurement points shall be considered based on the applicable standards and the size of the equipment. The measurement shall be done with slow response on the A- weighting scale. The average of A- weighted sound pressure level measurements expressed in decibels to a reference of 0.0002 micro bar shall not exceed the guaranteed value.

Corrections for background noise shall be considered in line with the applicable standards. All the necessary data for determining these corrections, in line with the applicable standards, shall be collected during the tests.

.....

B. (Category-III Guarantees)

I. Steam Generator and Auxiliaries

- (i) Coal Pulveriser capacities in T/hr. with specified design coal at rated fineness as per clause 1.03.02(i), Sub-Section IV, Part-A, Section-VI

- (a) At 100% mill loading with new set of grinding elements

.....
.....T/hr

- (b) Capacity with originally installed grinding elements in nearly worn out condition or at the end of guaranteed wear life (whichever is earlier) at 100% mill loading (with value not less than 90% of value indicated at above)

.....T/hr

- (ii) Maximum Furnace exit gas temperature (degree Celsius) (MHVT Value) in accordance with clause 1.03.02 (ii), Sub-section IV, Part-A, Section-VI

.....

- (iii) Run back capabilities (Ref. clause 1.03.02 (iii), Sub-section IV, Part-A, Section-VI)

.....

- (iv) Max. drift in Air leakage (% of gas flow at AH inlet), (In accordance with Clause No. 1.03.02 (iv), Sub-Section-IV, Part-A, Section-VI)
- a) Primary APH/Trisector APH
- b) Secondary APH/Trisector APH
- (v) Temperature variation in steam generator water wall tubes (In accordance with Clause No. 1.03.02 (v), Sub-Section-IV, Part-A, Section-VI)
- a) at the intermediate header (spiral to vertical / rifled tube wall to vertical plain tube wall change over)
- i) Maximum tube to tube temperature differential between any two adjacent tubes.°C
- ii) The maximum deviation of temperature of any tube w.r.t. to the average temperature of all the tubes.°C
- b) outlet of the water walls (end of furnace)
- i) Maximum tube to tube temperature differential between any two adjacent tubes.°C
- ii) The maximum deviation of temperature of any tube w.r.t. to the average temperature of all the tubes.°C
- (vi) Water wall erosion/corrosion rate in terms of average thinning of water wall tubes in accordance with clause no. 1.03.02 (vi) Sub-Section-IV, Part-A, Section-VI mm/year

(vii) Power Cycle Piping

Actual hanger readings
under cold and hot
condition (at rated
parameters) to match those
of design cold and hot
hanger readings for
MS/CRH/HRH/ HP & LP
bypass piping system
to be demonstrated

.....

(viii) Total NO_x (thermal as
well as fuel) at
Economizer outlet at
6% oxygen (O₂)
content in flue gas on
dry gas basis over
entire range of steam
generator operation
from 40% to 100%
TMCR load and for
whole range of
specified coal(s) (In
accordance with
Clause No. 1.03.02
(vii), Sub-Section-IV,
Part-A, Section-VI)
.....mg/N
m³

II. Flue Gas Desulphurisation System

(i)	Wet ball mill capacity at rated fineness as per clause 1.03.03(i), Sub-Section IV, Part-A, Section-VI	T/hr
(ii)	Wet ball mill wear parts guarantee as per clause 1.03.03 (ii), Sub-section IV, Part-A, Section-VI	hours
(iii)	Wet ball mill ball consumption as per clause 1.03.03 (iii), Sub-section IV, Part-A, Section-VI	grams /ton of ground limestone
(iv)	Pressure drop across FGD as per clause 1.03.03 (iv), Sub-section IV, Part-A, Section-VI	mmwc
(v)	Vacuum Belt Filter Capacity as per clause 1.03.03 (v), Sub-section IV, Part-A, Section-VI	 T/hr

- (vi) Gypsum purity as per
clause 1.03.03 (vi), Sub-section IV,
Part-A, Section-VI
- a) Gypsum purity%
- b) Chloride content ppm
- c) Moisture content%
- (vii) Maximum purge flow rate to waste water treatment
system as per clause 1.03.03 (vii), Sub-section IV,
Part-A, Section-VI m³/s
- (viii) Mist eliminator outlet droplet content
as per clause 1.03.03 (viii), Sub-section
IV, Part-A, Section-VI mg/Nm³

III. CW Pumps

CW pumps guarantees in accordance with Clause 1.03.13.01, Sub-Section-IV Part-A, Section-VI

.....Yes/No.....

IV. Plate Heat Exchanger (ECW system)

guarantees in accordance with clause no. 1.03.13.02, Sub-Section-IV Part-A, Section-VI

.....Yes/No.....

**~~V. Make-up Water Piping~~
DELETED**

VI. Pre-Treatment Plant

Pre-Treatment Plant guarantees in accordance with Clause 1.03.14, Sub-Section-IV Part-A, Section-VI

.....Yes/No.....

VII. DM PLANT (ION EXCHANGE DM PLANT) (As applicable)

DM PLANT (ION EXCHANGE DM PLANT) guarantees in accordance with Clause 1.03.15, Sub-Section-IV Part-A, Section-VI

.....Yes/No.....

VIII. DM PLANT (UF+RO+MB PLANT) (As applicable)

DM PLANT (UF+RO+MB PLANT) guarantees in accordance with Clause 1.03.16, Sub-Section-IV Part-A, Section-VI

.....Yes/No.....

.....Yes/No.....

IX. CW Chemical Treatment Plant

CW Chemical Treatment Plant guarantees in accordance with Clause 1.03.17, Sub-Section-IV Part-A, Section-VI

X. Condensate Polishing Plant

Condensate Polishing Plant Guarantees in accordance with Clause No.1.03.18 Sub-Section-IV Part-A, Section-VI

.....Yes/No.....

XI. Pumps (Equipment Cooling Water system, Auxiliary Water system, Pre-treatment plant, DM Plant & Condensate Polishing Plant)

Guarantees in accordance with Clause No.1.03.19 Sub-Section-IV Part-A, Section-VI

.....Yes/No.....

XII. Fuel Oil Handling Plant-Delete

XIII. Coal and Biomass Handling Plant & Gypsum Handling Plant

A. Capacity in T/Hr (equivalent to 100% of rated) of conveyor system including the intermediate equipments for each of the two parallel conveyor streams separately or any combination thereof to be tested in the following flow path operations

(i) (a) Flow Path IA (Direct Stream):

a) Apron feeder taking feed of incoming coal from WT Hopper and discharging crushed coal into last bunker of Unit-2 through travelling tripper mounted on Bunker Conveyor including all intermediate Conveyors and equipments.....MTPH.

b) Paddle feeder taking feed of incoming coal from track hopper and discharging crushed coal into last bunker of Unit #2 through travelling tripper mounted on Bunker Conveyor including all intermediate Conveyors and equipments.....MTPH

(b) Flow Path IIB (Stacking Stream) :

Apron feeder taking feed of incoming coal from WT hopper and stacking crushed coal in stockyard using yard conveyor with stacker/reclaimer station farthest from yard conveyor tail end and boom conveyor at highest angle including all intermediate equipments.

(ii) Flow Path II (Reclaiming Stream):

Reclaiming coal from stockyard using yard conveyor with stacker- reclaimer at farthest position from stacker conveyor head end, with the boom conveyor at its lowest position and feeding last bunker of Unit#2 through travelling tripper mounted on bunker conveyor including all intermediate

Equipment

.....MTPH

(iii) Flow Path III (Bio-mass stream):

Bulk receiving unit/Box Feeder/Surface Feeder etc taking feed of incoming Biomass and discharging Biomass into Storage silos/Bin which in turn feeds Biomass into Coal Conveyors through Biomass Conveyors including all intermediate equipments.

Bidder shall also demonstrate the guaranteed tipping rate of Truck Tippers.

.....MTPH

(iii) Limestone unloading stream: Flow Path III

Limestone Flow Path: Bulk receiving unit/ Box Feeder/Surface Feeder etc taking feed of incoming Limestone and discharging crushed Limestone in to Limestone storage Silos which in turn feeds Limestone to Limestone Day Silo through Limestone Conveyors, Bucket elevators, Diverter Plows including all intermediate Equipments.

Bidder shall also demonstrate the Guaranteed tipping rate of Truck Tippers

(iv) Gypsum flow path–IV:

Gypsum conveyor taking feed from gypsum dewatering unit and feeding to gypsum storage shed through

travelling tripper provided on last conveyor

.....MTPH

(v) Further for the purpose of Guarantee

tests all left out Conveyors not appearing above along with all associated equipment shall also be considered.

(B) Guaranteed capacity in T/Hr of the following:

(i) Paddle feeders (of CHP)	MTPH.....MTPH
(ii) Crushers (of CHP)	MTPH.....MTPH
(iii) Stacker cum Reclaimer	MTPH/.....MTPH
(iv) Vibrating Feeders	MTPH
(v) Travelling Tippler CHP	MTPH
(vi) Travelling Tippler GHP	MTPH
(vii) Apron feeder	MTPH
(viii) No of tips/Hour for wagon tipplers with side arm chargers	.....

Other performance tests and the procedure for performance testing of complete coal handling plant, Limestone Handling plant and Gypsum Handling plant shall be as given in Technical Specification.

XIV. Mill Reject System

(i) Guaranteed mill rejects system conveying Capacity	TPH

XV. ASH HANDLING PLANT

Performance guarantee parameters shall be as per Clause no 1.03.09 (Functional Guarantee), Part-A

XVI.	DDCMIS Demonstration parameters as per Section-VI, Part-A, Sub-Section-IV, DDCMIS System Guarantee Requirements	YES/No
XVII.	DELETED	
XVIII.	Fire Detection & Protection system We confirm Guarantee in accordance with Clause no. 1.03.12, Sub-section-IV, Part-A of Technical Specification.	
XIX.	Air Conditioning and Ventilation System We confirm Guarantee in accordance with Clause no. 1.03.04, Sub-section-IV, Part-A of Technical Specification.	
XX.	Air Compressor System We confirm Guarantee in accordance with Clause no. 1.03.20, Sub-section-IV, Part-A of Technical Specification.	
XXI.	Unit Load Ramp rate capability test in accordance with Clause no. 1.03.25, Sub-section-IV, Part-A of Technical Specification (Demonstration of minimum $\pm 3\%$ per minute ramp for 70% to 100% load range and minimum $\pm 2\%$ per minute ramp rate for 55% to 70% load and minimum $\pm 1\%$ per minute ramp rate for 40% to 55% load maintaining the parameters within prescribed limits as defined in closed loop control system requirements (Refer clause 1.03.26.02))	
XXII.	Compliance to the requirements as mandated in the latest Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023 as per the details mentioned in clause 26.02.00 & 26.05.00 of Part C (GTR) of technical specifications (refer Clause no. 1.03.25A, Sub-section-IV, Part-A of Technical Specification)	

.....

Date	:	(Signature).....
Place	:	(Printed Name).....
		(Designation).....
		(Common Seal).....

**EPC PACKAGE
FOR**

**KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(Erection Tools and Plant and Safety Equipments & Safety Personal Protective Equipments)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

I. ERECTION TOOLS & EQUIPMENTS

We indicate herein below the minimum T & P we have in our/our associate's/sub vendor's possession and the equipment we propose to bring to the Site required for entire EPC Package, in case the contract is awarded to us.

Sl. No.	Type and Description of the Equipment	Indicative minimum Quantity of major T&P to be deployed	Number the Bidder has in possession	Number the Bidder proposes to bring to the Site
(1)	(2)	(3)	(4)	(5)

We hereby confirm that the quantity and type of Certain tools and equipment, we will deploy for construction/erection, will not be less than those listed above and agree to bring more equipment, if so warranted, in the opinion of the Project Manager. Our proposed construction/erection equipment utilization plan indicating utilization dates and time duration of all major erection and construction equipment placed on site, is enclosed at Annexure..... to this Attachment-9.

We have enclosed construction and erection philosophy including sequence of erection and construction, implementation methodology, deployment schedule of tools and plant to be brought to site for construction/ erection work under the subject package at Annexure..... to Attachment-14 of Techno-Commercial Bid, linked with major milestone and intermediate milestone for Main Plant and Balance of Plant. We have also enclosed network showing interlinkage between major milestones, tool and plants deployed and sequential supply of material for the subject package.

Note: Bidder's attention is drawn to the provision of Clause No. 9 of BDS regarding deployment of T&Ps as per suggestive list of T&Ps for SG, TG and Civil Works enclosed at Annexure-A, B & C to BDS, Section-III to Bidding Documents. Bidder will deploy T&P for construction/erection not less than those listed in suggestive list of T&Ps for SG & Auxiliaries, TG & Auxiliaries and Civil Works enclosed at Annexure- A, B & C to BDS and agree to bring more equipment, if so warranted, in the opinion of the Project Manager.

II. Safety Equipments & Safety Personal Protective Equipments

The list of minimum suggestive **Safety Equipments & Safety Personal Protective Equipments** we propose to bring to the Site, in case the contract is awarded to us is indicated below:

Sl. No.	Minimum Suggested List of Safety Equipments and Safety Personal Protective Equipments	Minimum Quantity
1.	Safety Net (Conforming IS 11057:1984) Safety Net (Net Size: 10m x 5m, Mesh Size: 25 mm, Mesh Rope: 2mm double cord, Border/Tie Cord: 12mm diameter polypropylene rope (tested as per IS: 5175).Two metres length shall be provided at all four corners.	240 Nos.
2.	Fall Arrester 'Rope grab fall arrester' & anchorage line. Anchorage Line: 14mm- 16 mm diameter, three strand twisted Polyamide rope. Rope Grab fall arrester: Openable & Guided type Fall Arrestor (on flexible line) conforming EN 353-2 & works on 14-16 mm diameter polyamide rope. material: Nickel Chrome plated Steel Connector: Karbiner conforming to EN 362 (Minimum Strength 22 KN), material: Steel	200 nos. of Rope Grab Fall arrester' and Karbiner each. 90 nos. anchorage line, 30 metre long each, 30 nos. anchorage line, 40 metre long each
3.	Horizontal life line Stainless Steel Wire rope of 8mm diameter. Minimum six nos. of steel U-bolt clips are required for clamping each wire rope to a rigid support (03 nos. of U-bolt clips at each end).	40 nos. of wire rope, each 40 metre long 90 nos. of wire rope, each 25 metre long.
4.	Ladders on column The minimum design live load on metallic ladder shall be a single concentrated load of 100 kilo grams. All rungs shall have a minimum diameter of 1.90 centimeters, and minimum clear length of rungs shall be 40.6 centimeters. The distance between rungs shall not exceed 30.5 centimeters. Each ladder shall have maximum height of 9.0 metre. The ladder shall have proper fastenings for attaching it to a column using positive means such as bolt, weld or other type of fasteners.	cumulative length of ladders is 1200 metres
5.	Safety PPEs (Industrial Safety helmet & Industrial Safety Shoes) Industrial Safety Helmet (IS:2925-1984 marked).	1575 nos.

	Industrial Safety/Electrical Shoes (IS:15298-2002 marked). Full body Safety Harness (conforming IS:3521)	1575 nos. 395 nos.

We hereby confirm that the quantity and type of equipments, we will employ for construction/erection, will not be less than those listed above and agree to bring more equipment, if so warranted, in the opinion of the Project Manager.

Note: Continuation sheets of like size and format may be used as per Bidder's requirements and shall be annexed to this Attachment.

Date :	(Signature)
Place :	(Printed Name)
	(Designation)
	(Common Seal)

**EPC PACKAGE
FOR**

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(Essential Data)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Essential Data Sheet to be filled as per format given in the chapter Essential Data, identified in Part-A, Section-VI (Technical Specification) of the bidding documents.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(Guarantee Declaration)

Bidder's Name and Address:

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sir,

We declare that the ratings, capacities and performance figures of the equipment furnished by us under the package are guaranteed. We further declare that in the event of any deficiencies in meeting the guaranteed figures indicated below as established after conducting the guarantee tests, you may at your discretion accept the equipment/system after assessing the liquidated damages as specified in Clause No. 1.01.02 (Category-I) of Sub-Section-IV, "FUNCTIONAL GUARANTEES", Part-A, Section-VI (Technical Specifications) of the Bidding Documents, or reject the equipment/system and recover payments already made.

S.No.	Guaranteed Parameters	Guaranteed Figures
1.	Unit Heat rate in Kcal/KW hr under rated steam conditions at 77 mmHg(abs) condenser pressure with zero make up at 800 MW Unit Load (i.e. 100% of rated load) shall not be more than 2081 Kcal/KW hr.	<u>Yes</u>
2.	Unit Heat rate in Kcal/KW hr at 440 MW (i.e. 55% of rated load) under turbine throttle main steam pressure of 150 kg/cm ² (abs) and rated Main steam and Reheat Steam temperature at 77 mmHg(abs) condenser pressure with zero (0%) make up shall not be more than 2185 Kcal/KW hr.	<u>Yes</u>
3.	Continuous TG output of unit load (i.e. 105% of rated load) under rated steam conditions at 77 mm Hg (abs) condenser pressure with zero (0%) makeup shall not be less than 840 MW.	<u>Yes</u>
4.	Average Condenser pressure in mm Hg (abs) measured at 300 mm above the top row of condenser tubes with 840 MW output, 0% make up, design CW temperature and design CW flow shall not be more than 65 mmHg (abs).	<u>Yes</u>

5. Auxiliary Power Consumption for Unit Auxiliaries Unit auxiliary power consumption for unit auxiliaries required for continuous unit operation at 100% TMCR i.e. 800 MW unit load shall not be more than 42000 KW.	<u>Yes</u>
6. Auxiliary Power Consumption for Station Auxiliaries Station auxiliary power consumption comprising of all station Auxiliaries required for continuous station operation at 2X800 MW (i.e. 100% rated load of all the units) shall not be more than 21200 KW.	<u>Yes</u>
7. Steam Generating Capacity: Steam generating capacity (in T/hr) not less than 102% of turbine VWO steam flow requirement at rated steam parameters at superheater outlet and rated steam parameters at reheater outlet (with any combination of mills working as Employer's discretion) with the coal being fired from within the range specified in Annexure-IV-2 Sub-Section-I-B (Project information), Part-A, Section-VI.	<u>Yes</u>
8. Minimum life of coal pulveriser wear parts in hours of operation for entire range of specified coals (in accordance with Clause 1.01.01(vi), Sub-Section IV, Part-A, Section-VI, Technical Specifications).	
a) Classifier vanes as applicable hours of operation) As per clause 1.05.08.03 (5), Sub-section-A-01, Part-B, Section-VI, Technical Specification	<u>Yes</u>
b) Classifier cone and other items lined with ceramic material (hours of operation) As per clause 1.05.08.03 (4), Sub-section-A-01, Part-B, Section-VI, Technical Specification	<u>Yes</u>
c) Mill discharge valve (hours of operation) As per clause 1.05.08.03 (3), Sub-Section-A-01, Part-B, Section-VI, Technical specification	<u>Yes</u>
d) Seals (hours of operation) As per clause 1.05.08.03 (1), Sub- Section-A-01, Part-B, Section-VI, Technical Specification	<u>Yes</u>
e) Ceramic material wherever provided (hours of operation) As per clause 1.05.08.03 (4), Sub- Section-A-01, Part-B, Section-VI, Technical Specification	<u>Yes</u>
f) Grinding elements (rolls/Balls/ Tyres) (hours of operation) As per clause 1.05.08.03 (2), Sub- Section-A-01, Part-B, Section-VI, Technical specification	<u>Yes</u>

g)	Grinding Ring/Race/Segments/bowl (hours of operation) As per clause 1.05.08.03 (2), Sub- Section-A-01, Part-B, Section-VI, Technical specification	<u>Yes</u>
9.	Minimum sustained efficiency of Electrostatic Precipitator to limit the outlet dust burden to 17mg/Nm ³ under guarantee point condition (in accordance with clause 1.01.01(vii) Sub-Section-IV, Part-A, Section-VI	<u>Yes</u>
10.	FGD SO ₂ Removal Efficiency to achieve SO ₂ emission in the chimney to less than 60 mg/Nm ³ (6% O ₂ dry basis) under guarantee point condition (in accordance with clause 1.01.01(viii) Sub-Section-IV, Part-A, Section-VI	<u>Yes</u>
11.	Limestone consumption rate not exceeding 7800 kg/hr/unit in accordance with clause 1.01.01(ix) Sub-Section-IV, Part-A, Section-VI.	<u>Yes</u>
12.	Cooling Tower - The cold-water temperature of 32 deg C shall be guaranteed for the design conditions in accordance with clause 1.01.01(xii) Sub-Section-IV, Part-A, Section-VI.	<u>Yes</u>
13.	Air-heater air-in-leakage do not exceed the guaranteed or specified value (whichever is lower) as per description at Sub section-A-01 & A-02, Part-B (Mechanical), of Technical specifications.	<u>Yes</u>

Note :

By submitting the Attachment-11, Bidder declares/guarantees that it meets the requirements specified at sl. no. 1 to 13.

Date :

((Signature)

Place :

(Printed Name).....

(Designation).....

(Common Seal).....

**EPC PACKAGE
FOR**

**KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(Information regarding Quality Assurance Programme)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

We hereby provide the necessary information on Quality Assurance Programme containing the overall Quality Management and procedures, which we propose to follow during various phases of execution of the Contract.

Date : (Signature)

Place : (Printed Name)

(Designation)

(Common Seal)

**EPC PACKAGE
FOR**

**KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

**(Additional Information including alternative bid (without price), included
with the proposal)**

Bidder's Name and Address:

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

Sl. No.	Description of Information	Reference to Bidding Document	Reference to Bid Proposal

Date : (Signature)

Place : (Printed Name)

(Designation)

(Common Seal)

- Note :
- Bidder may refer Sub-Section-I, Part-A of Section-VI (Technical Specifications) regarding alternative offers (to be submitted without price).**
 - Continuation sheets of like size and format may be used as per Bidder's requirements and annexed to this Attachment.

EPC PACKAGE FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(Detailed work schedule (L2 Schedule))

DETAILED WORK SCHEDULE (L2 SCHEDULE)

**(TO BE ENCLOSED AS PER CLAUSE 36 OF SEC-II (ITB) OF BIDDING
DOCUMENTS)**

Suggestive List of Major T&Ps**a.To be deployed at site in SG & Auxiliaries area**

S.No.	Description of T&P	Quantity (nos.)
1a.	600/750 MT Crane for lifting of structures, Ceiling girders etc. as per the erection strategy.	01
1b.	Strand Jacks for lifting of structures, Ceiling girders, modular preassembled components etc. as per the erection strategy.	01 Sets or more as per site requirement
2.	625/325MT/250MT capacity FMC/Crawler mounted/Tower crane or equivalent	03
3.	Crawler mounted crane or equivalent (150 MT capacity)	02
4.	Crawler mounted crane (100 MT capacity)	03
5.	Crawler mounted crane (75 MT capacity)	03
6.	Hydra cranes/Escorts/Tata P&H 320 or equivalent 18 MT capacity 8 MT capacity	04 08
7.	Passenger cum goods lift	02 per unit
8.	Electro hydraulic pipe bending machine	02
9.	Portable pipe cutting & chamfering machine	02
10.	Welding generator (320 Amp.)	100
11.	Welding Transformers	15
12.	Heat treatment transformers	02
13.	Induction Heating Machines	09
14.	Winches as per site requirement 10 MT 5 MT 3/2/1 MT	02 12 15
15.	Hydro test pumps for Boiler hydraulic test	2 sets
16.	Sky climbers	02
17.	MIG/CO ₂ Welding machine	08
18.	Submerged arc welding machine	02
19.	DC arc welding machine	08

In case the bidder opts for erection strategy of SG by deploying tower cranes and pre-assembly yards, the bidder has to provide schedule and capacity and number of the cranes and related tools and plants for final deliberations and acceptance by Employer.

b. For Material Receipt, Handling & Transportation

S.No.	Description of T&P	Quantity (nos.)
1.	75 MT Crawler crane	02
2.	40 MT mobile crane	01
3.	18/14 MT mobile crane	02
4.	8 MT Hydro crane	02
5.	30/ 40 MT tractor trailer	01
6.	10/ 20 MT tractor trailer	02
7.	40 MT Electric gantry crane	02

ANNEXURE-B to Attachment-14

Suggestive List of Major T&Ps

b. To be deployed at site in TG & Auxiliaries area

Sl. No.	T&P	Nos. to be deployed
1.	Crawler mounted Crane(75 MT capacity)	01
2.	Crawler mounted Crane(18 MT capacity)	02
3.	Portable stator handling & lifting arrangement	01 set
4.	Hydra crane 8 MT capacity	02
5.	Electric winches • 10 MT • 5 MT • 3 MT/ 2 MT	02 04 12
6.	Special T&P required for water cooled condenser pre-assembly & modular erection as per erection strategy	As per site requirement
7.	Air winch 1 MT	02
8.	Portable pipe cutting & chamfering machine	01
9.	Pipe bending machine	02
10.	Electric tube expander	02
11.	Pneumatic tube expander	02
12.	Fork lift	01
13.	Portable air compressor	01
14.	Industrial vacuum cleaner	01
15.	Hydraulic test pump (motorized) of HP & LP type	02
16.	Centrifugal oil purifier	02
17.	Welding generator	35
18.	Welding transformers	10
19.	Heat treatment transformers	02
20.	DC Arc welding rectifier	04
21.	Ultrasonic test equipment	01
22.	Radiography test equipment	03
23.	Trailer 30T	01
24.	Truck	03
25.	Electrode oven (big)	01
26.	Electrode ovens (small)	30
27.	MIG/CO2 welding machine	04
28.	Hydraulic jack • 100 MT • 50 MT	02 02
29.	Induction heating machine	03
30.	Any other T&P	

a. For Material Receipt, Handling & Transportation

Sl. No.	T&P	Nos. to be deployed
1.	Crawler mounted Crane(75 MT capacity)	01
2.	Mobile crane (40 MT capacity)	01
3.	Mobile crane (18/14 MT capacity)	02
4.	Hydra crane 8 MT	02
5.	30/40 MT tractor trailer	01
6.	10/20 MT tractor trailer	02

PS: 1. The deployment of T&Ps shall be ensured by the agency as per actual requirement to meet the project implementation schedule. Based on the proposed erection strategy of the vendor, the details of T&Ps and their deployment schedule shall be firmed up with the EPC agency.

1. The suggested tools and plants have been indicated for SG and TG main plant packages. The bidder has to furnish the tools and plant requirements for the offsite areas like CHP, AHP, DM plant, switchyard, etc. for final acceptance of Employer. However, for CHP pkg the bidder has to ensure timely availability of 150MT & 250MT crane for completion of the CHP work as per schedule. The exact deployment schedule may be finalized in consultation with Employer site.

ANNEXURE-C to Attachment-14

SUGGESTED LIST OF PLANT, EQUIPMENT AND MACHINERY REQUIRED TO BE DEPLOYED BY CONTRACTOR AT SITE FOR CIVIL WORK			
Sl. No.	Description	Main Plant and Offsite Civil Works	Chimney & Chimney Elevator
1.	a) Pneumatic wagen drills with compressor for controlled blasting	As per requirements	
	b) Portable magazine	As per requirements	
	c) Rock breaker (Hydraulically operated & attached with 2 Cu.M. bucket capacity Excavator)	3 nos.	
2.	a) Crane - 250 MT	1	
	b) Crane - 150 MT	2	
	c) Crane - 80 MT (Tyre mounted)	1	
	d) Crane - 35 MT		1
3.	Crane – 100 MT/75MT	3	
4.	a) Gantry Crane - 40 MT	3	
	b) Gantry Crane - 30 MT		1
	c) Mobile Crane - 20 MT	3	
	d) Mobile Crane - 8 MT	1	
5.	Hydra 12 MT	12	2
6.	Tractor - 50 H.P.	4	As per requirement
	a) Trailers–50 MT capacity	3	As per requirement
	b) Trailers–10 to 15MT capacity	6	As per requirement
8.	Trolley for transporting fabricated material	6	As per requirement
9.	Submerged Arc Automatic Welding Machine (except for fabrication of CW liner, for other structural fabrication, it may be substituted by suitable numbers of MIG Welding)	4	
10.	MIG welding set	60	
11.	Welding transformer	10	10

12.	Welding generator / rectifiers - 400 A to 600 A		
	a) for Structural Steel Works	60	10
	b) for CW liner	4	
13.	a) Pug cutting machine	24	6
	b) Gas cutting machine		4
14.	a) Pillar drill machine - up to 2"	4	1
	b) Radial drill machine		2
15.	Bench grinder	6	2
16.	Hand grinder	24	As per requirement
17.	Flexible grinder	5	
18.	Portable drill machine	6	
19.	Cutting torches	20	As per requirement
20.	Electrical power winches for varying capacities	30	
21.	Chain pulley block - 5 MT to 20 MT	10	
22.	Chain pulley block - 1 MT to 5 MT	6	
23.	Radiographic testing machine	3	
24.	Ultrasonic testing machine	3	
25.	Dye penetration test	As per requirement	
26.	Destructive testing equipment	As per requirement	
27.	Lab equipment	As per Part-C Volume-IA	As per Part-4 Volume-IB
28.	Batching plant (with computer printout of quantities)		
	a) 30 Cu.M./Hr.	1 Set	1 Set
	b) 40 Cu.m./Hr.	2 Set	
29.	Concrete mixers 10/7Cu.M./hr. capacity	4	
30.	Transit mixer-minimum 5.0 Cu.M. capacity	8	4
31.	Concrete pump-37 Cu.M/Hr.	4	1
32.	Excavator (Poclain and J.C.B.)	3 + 4	
33.	Vibrators - Needle type	10	12
34.	Vibrators - Float, plate etc.	3	
35.	Staging for TG / BFP/ID Fan	1	
- Full set for one unit			

36. Lathe machine	3	
37. De-watering pumps		
(Excluding deepwell dewatering system)		
i) 3 H. P. to 5 H.P.	6	
ii) 10 H.P. to 20 H.P.	6	2
38. Sludge pump	1	
39. High head pump	2	2
40. Dumper / trucks	10	
41. Scaffolding units including shuttering plates	As per requirement	
42. Service compressor with hose	3	
43. Floor cutting and polishing machine	3	
44. Speed winches / Hoists	6	5
(for concrete and other building material)		
45. Jack hammers/Pavement Breakers	3	
46. Scaffolding pipe staging including clamps	25 MT	
47. Marble / Tile cutting machine.	4	
48. Vibro compactor/vibro roller / double drum vibratory roller		
i) Drum width 500mm	1	
ii) Drum width 750mm	1	
iii) Drum width 900mm	1	
iv) Plate Compactor	4	
49. Truck mounted concrete pump alongwith mixer/ alternatively truck mounted mixer with placing boom of minimum 40M high	2	
50. Portable hydraulic hammer / chisel	1	
51. Concrete coring machine for drilling in concrete upto150mm diameter along with diamond bits	1	
52. Total workstation for surveying including digital theodolite and digital level.	1	
53. Painting equipment set complete with compressor, hopper, screen, blasting hose pipe, nozzle, airless / conventional Spray etc.	10 sets	

54. Plate Bending Machine	2	1
(25mm x 2500 mm)		
55. Plasma cutting machine	1	
56. Concrete paver / spreader	As required	
57. Concrete sawing machine	1	
for cutting slit type opening		
in concrete		
58. Water tanker	3	
59. Arrangement of construction	As required	
water complete with pumps /		
pipes / water tanker / under-		
ground tank / overground		
tank etc.		
60. Preheating / post weld heat	As required	
treatment equipment / arrange-		
ment for welding of structures		
61. Rebar detector for detecting	1	
the reinforcement bar position		
in concrete before creating,		
in situ opening.		
62. DG Set 125 KVA	3	1
(Total capacity of 500kVA of		
generation capacity to be deployed		
from 4 or more number of DG Sets)		
63. Plate straightening machine		
(i) 20 X 2500 MM	1	
64. Chipping Hammer	2	
65. Punching Machine	4 Sets	
(Minimum Letter size 20 mm)		
66. Bar Bending and Cutting Machine	4	
67. Bull dozer	As required	
68. Road Paver & Finisher	As required	
69. Roller (10 Tonne Capacity)	2	
70. Sheep Foot Roller	1	
71. Slipform Shuttering equipment		1
72. Chimney Raft Shuttering materials		1100 (Sq.M)
73. Verticality Measuring Plumb		As required
74. Verticality Measuring Laser System		2
75. HT Wire		As required
76. Well point dewatering system	As per	
	requirement	
77. Misc. Tools & Tackles	As Required	
78. Builder Tower Hoist	4	
79. Concrete boom placer	2	
80. Collapsible mobile shed		As required

for outdoor welding work.	
81. Concrete pavement cutters	
With wet diamond saw cutter	
For cutting pavement of	
Thickness up to 300mm	As required

NOTES :

- a) These requirements and capacity of the equipment are indicative only and not exhaustive and deployment of the equipment, machinery and labour shall be suitably augmented to achieve the timely completion of the work as per the program and directions of the engineer-in-charge, without any additional cost to Owner. Deployment schedule of major equipment to be mentioned in L2 Program
- b) Other materials like cables, sling, gloves, goggles, safety belts, safety helmets, heating oven, pre-heating / post weld heat treatment arrangement, material for making platform and platform support etc. shall be mobilised as per requirement.
- c) Other equipment though required for the timely completion of the job but not listed above shall be deployed by the contractor, as per the job requirements and as directed by the Engineer.
- d) The contractor shall make suitable provisions for repairs and maintenance of the equipment mobilised and always keep them in good working conditions, as the repair facilities for such equipment are not available at the project site.
- e) A minimum stock of 15 days of gas and 30 days of electrode shall be maintained at the site.
- f) A minimum stock of aggregate & sand of two weeks shall be maintained at site.
- g) All cranes shall be crawler mounted.
- h) The bidder shall be required to furnish along with document the deployment of tools & equipment correlating with the monthly output / productivity. This shall be finalized during pre-award discussion.
- i) For all columns & sub-structure beams of TG foundation, sets of formwork for all columns & beams of each level are to be deployed so that all the columns and beams at each level can be cast simultaneously.

**EPC PACKAGE
FOR**

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(Schedule of Construction and Erection Tools & Tackles)

DELETE

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

Deleted

EPC PACKAGE FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(Declaration on Local Content)

DELETED

EPC PACKAGE FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

**(Declaration on exemption from meeting the Local
Content)**

Deleted

EPC PACKAGE FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(FORMS OF LETTER OF UNDERTAKING TO BE SUBMITTED
BY THE BIDDER/ASSOCIATE IN COMPLIANCE TO THE
REQUIREMENTS OF CLAUSE 1.0.0 AND 3.0.0, ITEM 4 OF
BID DATA SHEET AS PER FORMATS ENCLOSED)

EPC PACKAGE FOR

**KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

**(FORM OF LETTER OF UNDERTAKING TO BE SUBMITTED
BY THE BIDDER AND *ASSOCIATE (AS APPLICABLE) IN COMPLIANCE
TO THE REQUIREMENTS OF
CLAUSE 1.1.1(A) AND 3.0.0, ITEM 4 OF BID DATA SHEET)**

**LETTER OF UNDERTAKING FOR
SUPER CRITICAL STEAM GENERATOR SETS TOWARDS
PHASED MANUFACTURING PROGRAMME
(ON NON JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

1.0 We, M/s..... (Bidder) is submitting our proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)** against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**.

*And Whereas we are associating with M/s(the Associate) for manufacturing of supercritical Steam Generator sets in India.

*2.0 We, M/s.....(Bidder), hereby undertake that in accordance with the requirement of clause 1.1.1(A) and 3.0.0 of item no. 4.0 of BDS, we have registered in India under the Companies Act, our company (i.e. M/s.....) / our Subsidiary Company (i.e M/s....., where we are a promotor with% equity participation) / our Joint Venture (JV) Company (i.e. M/s....., where we are a promotor with% equity participation) (hereinafter called the "Indian Manufacturing Company") for manufacturing of super critical Steam Generator sets in a phased manner as per the Phased Manufacturing Programme elaborated in the bidding document.

*Further our subsidiary company/JV company has registered another manufacturing subsidiary company M/s..... (hereinafter called "Indian Manufacturing Subsidiary Company") in India under companies act for manufacturing of supercritical Steam Generators in India, in a phased manner as per the Phased Manufacturing Programme elaborated in the bidding documents.

We are enclosing the copy of Board Resolution in this regard at Annexure..... to this Attachment.

- *2.0 We, M/s_____ (Associate), hereby undertake that in accordance with the requirement of clause 1.1.1(A) and 3.0.0 of item no. 4.0 of BDS, we have registered in India under the Companies Act, our company (i.e. M/s.....) / our Subsidiary Company (i.e. M/s....., where we are a promotor with% equity participation) / our Joint Venture (JV) Company (i.e. M/s....., where we are a promotor with% equity participation) (hereinafter called the "Indian Manufacturer Company") for manufacturing of super critical Steam Generator sets in a phased manner as per the Phased Manufacturing Programme elaborated in the bidding document.

*Further our subsidiary company/JV company has registered another manufacturing subsidiary company M/s..... (hereinafter called "Indian Manufacturing Subsidiary Company") in India under companies act for manufacturing of supercritical Steam Generators in India, in a phased manner as per the Phased Manufacturing Programme elaborated in the bidding documents.

We are enclosing the copy of Board Resolution in this regard at Annexure..... to this Attachment.

- 2.1 We M/s..... (Bidder) undertake that we shall submit an **on demand Bank Guarantee of INR 900 Million** as security for any default against meeting the specified Phase Manufacturing Programme (PMP) (in case of award). We understand that in case we do not implement the PMP even by the overall completion date stated in the bidding documents, the Employer may in his discretion invoke the above Bank Guarantee.

OR

We confirm that we have already given commitments for PMP and submitted bank guarantee(s) for security for default against specified PMP for Steam Generators to following Central/ State sector Power generating Company for supercritical projects as per following details*:

i)

ii)

(* Continuation Sheets of like size may be used and shall be annexed to this Attachment.)

OR

****We confirm that we have already given commitments for PMP and our submitted bank guarantee(s) for security for default against specified PMP for Steam Generators to following Central/ State sector Power generating Company have already been released for supercritical projects as per following details*:***

i)

ii)

(* Continuation Sheets of like size may be used and shall be annexed to this Attachment.)

- 3.0 We *and Our Associate, undertake that a valid Technology transfer agreement including license to manufacture and supply in India between M/s_____, a Qualified Steam Generator Manufacturer or M/s_____ their technology provider (if any), and M/s_____, the Indian Manufacturing Company, is in place covering the type, size and rating of the Steam Generator sets specified, valid minimum up to the end of the defect liability period of the Contract. The signatory of the technology transfer agreement with the Indian Manufacturing Company owns the technology / have authorization to use and further license the technology

The documentary evidence in support of above is enclosed at Annexure..... to this Attachment.

- 3.1 We *and Our Associate, undertake that the technology transfer agreement as above covers transfer of technological know-how for super critical Steam Generator in the form of complete transfer of design dossier, design software(s), drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company M/s_____. We *and Our Associate, further undertake that the above technology transfer agreement has the provision that the transfer of technology to the Indian Manufacturing Company shall be completed by the time last 800 MW supercritical unit is supplied by us under this tender.
- 4.0 *We *and Our Associate, undertake that major part i.e. _____% of the land required for setting up manufacturing facility in India is in possession with clear title in the name of M/s_____, the Indian manufacturing Company or M/s_____, its Indian promoter (but pledged/leased to M/s_____, the *Subsidiary Company/*JV Company).

OR

*We *and Our Associate, undertake that we are augmenting our already existing manufacturing facility in India for Manufacturing of Super critical Steam Generator Sets, for which we confirm that major part i.e. % of the additional land required is in our possession with clear title for augmenting the existing facilities.

Necessary documents confirming the same are enclosed at Annexure_____of Attachment.

- 5.0 We *and Our Associate, undertake that the subscribed and paid up share capital or Networth of promoters in the Indian Manufacturing Company is INR..... Million as per details hereunder:

Sl.No. Name of Promoter *Paid up share capital / *Networth

1

2

The undertaking of promoters to enhance the subscribed and paid up share capital or Networth to INR 1000 Million prior to the date of award, (in case of award) is attached as Appendix..... .

For M/s.....
(Bidder/Contractor)

WITNESS :

1.:

(Signature of the Authorised
Representative)

2.:

(Official Address)

Name.....

(Designation).....

(Common Seal of the
Company).....

M/s.....

For

* (Associate)

WITNESS :

1.:

.....
(Signature of the Authorised
Representative)

2.:

(Official Address)

Name.....

(Designation).....

(Common Seal of the
Company).....

Note :

1. * Strike out whichever is not applicable.
2. Bidder shall necessarily enclose the documentary evidence establishing that the signatory of the technology transfer agreement with Indian Manufacturing Company own the technology or have the authorization to use and further license the technology.
3. The certificates from a practicing Chartered Accountant shall be submitted by the bidder certifying the amount of subscribed and paid up share capital, or net worth as the case may be as on a date not earlier than 15 days from the date of techno-commercial bid opening / award date as applicable.
4. **The undertaking shall be furnished by the Bidder in case the Bidder is meeting requirement of clause 1.1.1(A), on its own. In case of Associate, the undertaking shall necessarily be furnished by the Bidder alongwith his Associate.**

EPC PACKAGE FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

**(FORM OF LETTER OF UNDERTAKING TO BE SUBMITTED
BY THE BIDDER AND *ASSOCIATE (AS APPLICABLE) IN COMPLIANCE
TO THE REQUIREMENTS OF
CLAUSE 1.1.1(B) AND 3.0.0, ITEM 4 OF BID DATA SHEET)**

**LETTER OF UNDERTAKING FOR
SUPER CRITICAL STEAM TURBINE GENERATOR SETS TOWARDS
PHASED MANUFACTURING PROGRAMME**

(ON NON JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

1.0 We, M/s..... (Bidder) is submitting our proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)** against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**.

*And Whereas we are associating with M/s(the Associate) for manufacturing of supercritical Steam Turbine Generator sets in India.

*2.0 We M/s.....(Bidder) hereby undertake that in accordance with the requirement of clause 1.1.1(B) and 3.0.0 of item no. 4.0 of BDS we have registered in India under the Companies Act, our Company (i.e. M/s.....) / our Subsidiary Company (i.e. M/s....., where we are a promoter with ____ % equity participation) / our JV Company (i.e. M/s....., where we are a promoter / *our wholly owned subsidiary is a promotor with % equity participation) (herein after called the "Indian Manufacturing Company") for manufacturing of super critical Steam Turbine Generator sets in a phased manner as per the Phased Manufacturing Programme elaborated in the bidding document.

*Further our subsidiary company/JV company has registered another manufacturing subsidiary company M/s..... (hereinafter called "Indian Manufacturing Subsidiary Company") in India under companies act for manufacturing of supercritical Steam Turbine Generators in India, in a phased manner as per the Phased Manufacturing Programme elaborated in the bidding documents.

We are enclosing the copy of Board Resolution in this regard at Annexure..... to this Attachment.

- *2.0 We M/s. _____ (Associate) hereby undertake that in accordance with the requirement of clause 1.1.1(B) and 3.0.0 of item no. 4.0 of BDS we have registered in India under the Companies Act, our Company (i.e. M/s. _____) / our Subsidiary Company (i.e. M/s. _____, where we are a promoter with % equity participation) / our JV Company (i.e. M/s. _____, where we are a promoter / *our wholly owned subsidiary is a promoter with % equity participation) (herein after called the "Indian Manufacturing Company") for manufacturing of super critical Steam Turbine Generator sets in a phased manner as per the Phased Manufacturing Programme elaborated in the bidding document.

*Further our subsidiary company/JV company has registered another manufacturing subsidiary company M/s. _____ (hereinafter called "Indian Manufacturing Subsidiary Company") in India under companies act for manufacturing of supercritical Steam Turbine Generators in India, in a phased manner as per the Phased Manufacturing Programme elaborated in the bidding documents.

We are enclosing the copy of Board Resolution in this regard at Annexure..... to this Attachment.

- 2.1 We M/s. _____, undertake that we shall submit an **on demand Bank Guarantee of INR 650 Million** as security for any default against meeting the specified Phase Manufacturing Programme (PMP) (in case of award). We understand that in case we do not implement the PMP even by the overall completion date stated in the bidding documents, the Employer may in his discretion invoke the above Bank Guarantee.

OR

We confirm that we have already given commitments for PMP and submitted bank guarantee(s) for security for default against specified PMP for Steam Turbine Generators to following Central/ State sector Power generating Company for supercritical projects as per following details*:

- i)
- ii)

(* Continuation Sheets of like size may be used and shall be annexed to this Attachment.)

OR

****We confirm that we have already given commitments for PMP and our submitted bank guarantee(s) for security for default against specified PMP for Steam Turbine Generators to following Central/ State sector Power generating Company have already been released for supercritical projects as per following details*:***

- i)
- ii)

(* Continuation Sheets of like size may be used and shall be annexed to this Attachment.)

- 3.0 We *and our Associate, undertake that a valid Technology transfer agreement including license to manufacture and supply in India between M/s. _____, a Qualified Steam Turbine Generator Manufacturer or M/s. _____ their technology providers (if any), M/s. _____ Qualified Generator Manufacturer (in case of separate Generator Manufacturer) or M/s. _____ their technology providers (if any) and M/s. _____, the Indian Manufacturing Company is in place, covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the Contract. The signatory of the technology transfer agreement with the Indian Manufacturing Company owns the technology / have authorization to use and further license the technology.

The documentary evidence in support of above is enclosed at Annexure..... to this Attachment.

- 3.1 We *and our Associate undertaken that the technology transfer agreement as above covers transfer of technological know-how for super critical Steam Turbine Generator/ Steam Turbine and Generator (in case of separate Generator Manufacturer) in the form of complete transfer of design dossier, design software(s), drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company M/s_____. We *and our Associate further undertake that, the above technology transfer agreement has the provision that the transfer of technology to the Indian Manufacturing Company shall be completed by the time last 800 MW supercritical unit is supplied by us under this tender.
- 4.0 *We *and our Associate undertake that major part i.e. % of the land required for setting up manufacturing facility in India is in possession with clear title in the name of M/s_____, an Indian manufacturing Company or M/s_____, its Indian promoter (but pledged/leased to the M/s_____, the *Subsidiary Company/*JV Company).

OR

*We *and our Associate undertake that we are augmenting our already existing manufacturing facility in India for Manufacturing of Super critical Steam Turbine Generator Sets, for which we confirm that major part i.e. % of the additional land required is in our possession with clear title for augmenting the existing facilities.

Necessary documents confirming the same is enclosed at Annexure _____ to this Attachment.

- 5.0 We undertake that the subscribed and paid up share capital or Networth of promoters in the Indian Manufacturing Company is INR Million as per details hereunder:

Sl.No.	Name of Promoter	*Paid up share capital / *Networth

1

2

The undertaking of promoters to enhance the subscribed and paid up share capital or Networth to INR 1000 Million prior to the date of award, (in case of award) is attached as Appendix.....

M/s.....

For

(Bidder/Contractor)

WITNESS :

1.:

2.:

(Official Address)

.....
(Signature of the Authorised
Representative)

Name.....

(Designation).....

(Common Seal of the
Company).....

For M/s.....
*(Associate)

WITNESS :

1.:

2.:

(Official Address)

.....
(Signature of the Authorised
Representative)

Name.....

(Designation).....

(Common Seal of the
Company).....

Note :

1. * Strike out whichever is not applicable.
2. Bidder shall necessarily enclose the documentary evidence establishing that the signatory of the technology transfer agreement with Indian Manufacturing Company own the technology or have the authorization to use and further license the technology.
3. The certificates from a practicing Chartered Accountant shall be submitted by the bidder certifying the amount of subscribed and paid up share capital, or net worth as the case may be as on a date not earlier than 15 days from the date of techno-commercial bid opening / award date as applicable.
4. **The undertaking shall be furnished by the Bidder in case the Bidder is meeting requirement of clause 1.1.1(B), on its own. In case of Associate, the undertaking shall necessarily be furnished by the Bidder alongwith his Associate.**

EPC PACKAGE FOR

**KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

(Major Milestone Schedule of Phased Manufacturing Program)

Bidder's Name and Address:

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

We declare that various major milestone schedules of phased manufacturing programme and their completion schedule shall be as given here under.

(A) For Steam Generator & Auxiliaries

Sl. No.	Equipment	Indicative Facilities Requirement	To be established latest by (Month from Date of Award)
1.	Pressure Parts (straight water wall & spiral water wall)	* Straight tube butt welding facility * Automatic welding facility for panel processing * NDT facilities * Hydro testing * Continuous heat treatment furnace * Gang/panel bending facility (for straight water wall & spiral water wall tube panels)	36
2.	Pressure Parts (economiser, super heater and reheater coils and panels)	* System bend facility * Welding facility for coils * NDT facilities * Hydro testing * Continuous heat treatment furnace * Jigs & fixtures for assembly and layout checking facility * Portable equipment for material/grade identification	42

Sl. No.	Equipment	Indicative Facilities Requirement	To be established latest by (Month from Date of Award)
3.	Pressure Parts (headers)	* Welding * Machining & drilling * Heat treatment * Hydraulic testing * NDT facilities * Pressing facility for end caps & tees * Material identification facility * Facility for high alloy (P5 and above) continuous welding	42
4.	Separator (shell and dished ends)	* Rolling facility/pressing facility * Machining & drilling * Welding * Heat treatment * Hydraulic testing * NDT facilities * Pressing arrangements for dished ends	48

(B) For Steam Turbine Generator & Auxiliaries

Sl.No.	Equipment	Indicative Facilities Requirement	To be established latest by (Month from Date of Award)
1.	Turbine Casings and Valves machining	* LP outer Casing fabrication * HP/IP/LP Casing Machining & blading * Heat Treatment/Stress Relieving * Turbine valve machining & assembly testing	36
2.	Turbine Rotor machining	* Rotor machining including grooves & Fir Tree machining * Rotor assembly and balancing * Turbine assembly	42
3.	Rotating blades machining	* Rotating Blade machining & finishing	52

Sl.No.	Equipment	Indicative Facilities Requirement	To be established latest by (Month from Date of Award)
4.	Generator Core and stator manufacturing	* Core stamping, fabrication facility * Heat Treatment/Stress Relieving * Generator Stator Fabrication and core building facility * Stator bar manufacturing and heavy machining facility for fabricated Items.	40
5.	Generator Rotor	* Rotor machining including slotting * Rotor assembly and balancing * Exciter manufacturing & testing * Rotor winding facility	42
6.	Generator Assembly	* Generator assembly and testing	48

Date : (Signature)

Place : (Printed Name)

(Designation)

(Common Seal)

**EPC PACKAGE (EXCLUDING STG PKG.)
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**

**BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB
(INTEGRITY PACT)**

Between

Damodar Valley Corporation (DVC), hereinafter referred to as “The Principal”

AND

.....hereinafter referred
to as “The Bidder/ Contractor”

Preamble:

The Principal intends to award, under laid down organizational procedures, contract(s) for.....The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness / transparency in its relations with its bidder(s) and/or contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitors (IEMs), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

SECTION-1: COMMITMENTS OF THE PRINCIPAL

1. The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
 - a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of the contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in the tender process or contract execution.

- c. The Principal will exclude from the process all known prejudiced persons.
- 2. If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

SECTION-2: COMMITMENTS OF THE BIDDER(s)/CONTRACTOR(s)

- 1. The Bidder(s)/ Contractor(s) commit themselves to take all measures necessary to prevent corruption. The Bidder(s)/ Contractor(s) commit themselves to observe the following principles during participation in the tender process and during the contract execution.
 - a. The Bidder(s)/Contractor(s) will not, directly or through any other person of firm, offer, promise or give to any of Principal's employees involved in the tender process or the execution of the contract, or to any third person any material or other benefit, which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
 - b. The Bidder(s)/Contractor(s) will not enter with other Bidders into any undisclosed agreement or, understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
 - c. The Bidder(s)/ Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 - d. The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/Representatives in India, if any. Similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further, details as mentioned in the "Guidelines on the Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/ Contractor(s). Further, as mentioned in the Guidelines all the payment made to the Indian agent/representative shall be in Indian Rupees only. Copy of the "Guidelines on the Indian Agents of Foreign Suppliers" is attached.
 - e. The Bidder(s)/ Contractor(s) will, when presenting their bid, disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

f. The Bidder(s)/ Contractor(s) who have signed the Integrity Pact shall not approach the courts while representing the matter to IEMs and shall wait for their decision in the matter.

- (2) The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

SECTION-3: DISQUALIFICATION FROM TENDER PROCESS AND EXCLUSION FROM FUTURE CONTRACTS

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of section-II above, or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify such Bidder(s)/Contractor(s) from the tender process or to terminate the contract, if already signed and to take action as per the procedure of "Banning of business dealings" of the Principal.

SECTION-4: COMPENSATION FOR DAMAGES

- (1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- (2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to Security deposit cum Performance Bank Guarantee, and if the amount of damage exceeds the amount of Security Deposit cum Performance Bank Guarantee, then the Principal shall be entitled to recover the balance amount of damage from the Contractor either in cash or from the amount payable and due from such Contractor in other contracts being executed by him with DVC.

SECTION-5: PREVIOUS TRANSGRESSION

- (1) The Bidder declares that no previous transgressions occurred in the last three years with any other Company in any country conforming to the anti-corruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.
- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure of "Banning of business dealings" of the Principal.

SECTION 6: EQUAL TREATMENT OF ALL BIDDERS/CONTRACTORS/SUB-CONTRACTORS

1. In case of Subcontracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the subcontractor.
2. The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.
3. The Principal will disqualify from the tendering process all bidders who do not sign this Pact or violate its provisions.

SECTION-7: CRIMINAL CHARGES AGAINST VIOLATING BIDDER(S) / CONTRACTOR(S) / SUBCONTRACTOR(S)

If the Principal obtains knowledge of conduct of a Bidder/Contractor, or Subcontractor, or of an employee or a representative or an associate of the Bidder, Contractor or Subcontractor, which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

SECTION-8: INDEPENDENT EXTERNAL MONITOR

1. The Principal appoints competent and credible Independent External Monitor for this Pact after approval of Central vigilance Commission as follows:

Sl. No.	Name	Address	E-Mail
1	Shri Bam Bahadur Singh, Ex-CMD, MSTC	Flat no. 1802, Uniworld City, New Town, Rajarhat, Kolkata, West Bengal. PIN: 700160	bbsinghbeml@gmail.com
2	Dr. Atanu Purkayastha, IAS (Retd.)	DII/113, Kaka Nagar, Dr. Zakir Hussain Road, New Delhi. PIN: 110003	dratanu2011@gmail.com

The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

2. The Monitor is not subject to instructions by the representatives of the parties and performs his/her functions neutrally and independently. The Monitor would have access to all Contract documents, whenever required. It will be obligatory for him/her to treat the information and documents of the Bidders/Contractors as confidential. He/she reports to the Chairman, DVC.
3. The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon

his/her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Sub-contractors.

4. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s)/ Sub-contractor(s) with confidentiality. The Monitor has also signed declarations on 'Non-Disclosure of Confidential Information and of 'Absence of Conflict of Interest'. In case of any conflict of interest arising at a later date, the IEM shall inform Chairman, DVC and recuse himself / herself from that case.
5. The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
6. As soon as the Monitor notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
7. The Monitor will submit a written report to the Chairman, DVC within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
8. If the Monitor has reported to the Chairman DVC, a substantiated suspicion of an offence under relevant IPC/ PC Act, and the Chairman DVC has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.
9. The word 'Monitor' would include both singular and plural.

SECTION- 9: PACT DURATION

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded. Any violation on the same would entail disqualification of the bidders and exclusion from future business dealings.

If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by Chairman of DVC.

SECTION-10: OTHER PROVISIONS

1. This agreement is subject to Indian law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. Kolkata.
2. Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
3. If the contractor is a partnership or consortium, this agreement must be signed by all partners or consortium members.
4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
5. Issues like Warranty / Guarantee etc. shall be outside the purview of IEMs.
6. In the event of any contradiction between the Integrity Pact and its annexure, the clause in the Integrity Pact will prevail.

(For & on behalf of DVC)

(For & on behalf of Bidder/Contractor)

(Office Seal)

(Office Seal)

Witness 1:

(Name & Address)

Witness 2:

(Name & Address)

GUIDELINES FOR INDIAN AGENTS OF FOREIGN SUPPLIERS

- 1.0 There shall be compulsory registration of agents for all Global (Open) Tender and Limited Tender of DVC.
- 1.1 Registered agents will file an authenticated Photostat copy duly attested by a Notary Public / original certificate of the principal confirming the agency agreement and giving the status being enjoyed by the agent and the commission / remuneration / salary/ retainer ship being paid by the principal to the agent before the placement of order by DVC.
- 1.2 Wherever the Indian representative have communicated on behalf of their principals and the foreign parties have stated that they are not paying any commission to the Indian agents, and the Indian representative is working on the basis of salary or as retainer, a written declaration to this effect should be submitted by the party (i.e. Principal) before finalizing the order.

2.0 DISCLOSURE OF PARTICULARS OF AGENTS/ REPRESENTATIVES IN INDIA, IF ANY.

- 2.1 Tenderers of Foreign nationality shall furnish the following details in their offer.
 - 2.1.1 The name and address of the agents/representatives of India, if any and the extent of authorization and authority given to commit the Principals, in case the agent/ representative be a foreign company, it shall be confirmed whether it is real substantial Company and details of the same shall be furnished.
 - 2.1.2 The amount of commission/ remuneration included in the quoted price(s) for such agents/ representatives in India.
 - 2.1.3 Confirmation of the Tenderer that the commission/ remuneration if any, payable to his agents/ representatives in India, may be paid by DVC in Indian Rupees only.
- 2.2 Tenderers of Indian Nationality shall furnish the following details in their offers:
 - 2.2.1 The name and address of the foreign principals indicating their nationality as well as their status, i.e, whether manufacturer or agents of manufacturer holding the Letter of Authority of the Principal specifically authorizing the agent to make an offer in India in response to tender either directly or through the agents/ representatives.
 - 2.2.2 The amount of commission / remuneration included in the price (s) quoted by the Tenderer for himself.
 - 2.2.3 Confirmation of the foreign principals of the Tenderer that the commission/ remuneration, if any, reserved for the Tenderer in the quoted price (s), may be paid by DVC in India in equivalent Indian Rupees on satisfactory

completion of the Project or supplies of Stores and Spares in case of operation items.

- 2.3 In either case, in the event of contract materializing, the term of payment will provide for payment of the commission / remuneration, if any payable to the agents/ representatives in India in Indian Rupees on expiry of 90 days after the discharge of the obligation under the contract.
- 2.4 Failure to furnish correct and detailed information as called for in paragraph-2.0 above will render the concerned tender liable to rejection or in the event of a contract materializing, the same liable to termination by DVC. Besides this there would be a penalty of banning business dealing with DVC or damage or payment of a named sum.

EPC PACKAGE FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

DELETED

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION (2x800 MW)**

BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB

(INFORMATION REGARDING SAFETY MANAGEMENT)

DELETED

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

We here by declare the details of our foreign principals as below:

<i>Sl. No.</i>	<i>Name</i>	<i>Detailed Address</i>	<i>Relationship with Bidder</i>
1.			
2.			
3.			
4.			
5.			

Date :

(Signature).....

Place :

(Printed Name).....

(Designation).....

(Common Seal).....

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO.: DVC/C&M/ENGINEERING/KTPS (2X800 MW)/EPC/IPHB**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Check List of documents for Envelope-I (Techno-Commercial) Bid

Sl. No.	Details of Checks	Enclosed : Yes/No
1.	Bid Form Envelope-I (Techno-Commercial) BID	.....
2.	Attachment-1 : Bid Security (enclosed in a separate sealed Envelope)	.....
3.	Attachment-2 : Power of Attorney	.....
4.	(i) Attachment-3 (Qualification Data along with Qualification Route Details & Deed(s) of Joint Undertaking, as applicable)	.....
5.	i) Attachment-4 : Eligibility of Facilities	.....
	ii) Attachment-4A : List of Special Maintenance Tools & Tackles	.....
6.	Attachment-5 : Details of Proposed Sub-Contractors / Sub-Vendors:	.....
7.	Attachment-6 : NO DEVIATION CERTIFICATE	.....
8.	Attachment-7 Details in respect of Local Agent (Without Fees)	.....
9.	Attachment-8 (Declaration on Demonstration Parameters)	.....
10.	Attachment-9 Schedule of Erection Tools & Equipments	.....

11.	Attachment-10: Essential Data	.....
12.	Attachment-11: Guarantee Declaration	.....
13.	Attachment-12 : Information regarding Quality Assurance Programme	.....
14.	Attachment-13 : Additional information	.....
15.	Attachment-14 : Detailed Work Schedule / Brief Integrated Network (L1 Schedule)	.....
16.	Attachment-15	DELETED.....
17.	Attachment-16 : Electronic Fund Transfer Authorisation Form	DELETED.....
		
18.	Attachment-17 : Form of Acceptance of Fraud Prevention Policy	DELETED.....
19.	Attachment-17A : Declaration on Banning Policy	DELETED.....
20.	Attachment-18 letter of Undertaking towards super critical Steam Generator Sets and super critical Steam Turbine Generator Sets towards Phased Manufacturing Programme	.....
21.	Attachment-19 Major Milestone Schedule of Phased Manufacturing Programme	.....
22.	Attachment-20 : Integrity Pact	.....
23.	Attachment-21	DELETED.....
24.	Signed and stamped copy of Amendment(s)/Clarification(s)/ Errata to bidding documents.	DELETED.....
25.	Attachment-22 : Information Regarding Safety Management	DELETED.....
26.	Attachment 23: Declaration Regarding Capacity & Capability of Associate/ Collaborator	.....
27.	Attachment 24: Details of foreign principals or associates	.....

Date : (Signature).....
Place : (Printed Name).....
(Designation).....
(Common Seal).....

Damodar Valley Corporation

(Established by the ACT XIV of 1948)



BIDDING DOCUMENTS

FOR

EPC PACKAGE

FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

SECTION - VII

BOOK 2 OF 3

BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS (2X800 MW)/EPC/IPHB

Damodar Valley Corporation

(Established by the ACT XIV of 1948)



BIDDING DOCUMENTS

FOR

EPC PACKAGE

FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

SECTION - VII

BOOK 2 OF 3

BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS (2X800 MW)/EPC/IPHB

(This document is meant for the exclusive purpose of bidding against this Bid Document No. / Specification and shall not be reproduced or otherwise used for purposes other than that for which it is specifically issued).

TABLE OF FORMS AND PROCEDURES

Sl.No.	Description
1.	(i) Bid Form (Techno-Commercial Bid) along with Attachments [enclosed as Section-VII, Book 1 of 3]
	(ii) Bid Form (Price Bid) along with Attachments & Price Schedules [enclosed as Section-VII, Book 2 of 3]
	Book 3 of 3 consisting of the following:
	Book 3 of 3 [Part 1]
2.	Bid Security Form - Bank Guarantee
2a.	Bid Security Form Letter of Credit
3.	(a) Form of Notification by the Employer to the Bidder (b) Form of Sight Draft
4.	Forms of Notification of Award
5.	Form of Contract Agreement
6.	Performance Security Forms
6a.	Performance Security Form for Phased Manufacturing Programme (PMP)
7.	(i) Bank Guarantee Form for Advance Payment (Supply-FOB/Ex-works)
7.	(ii) Bank Guarantee Form for Advance Payment (Installation Services / Civil / Structural Works)
8.	Form of Completion Certificate
9.	Form of Operational Acceptance Certificate
10.	Form of Trust Receipt
11.	Forms of Indemnity-Cum-Undertaking Agreement (3 Nos.)
12.	Form of Authorization Letter
13.	Forms of Deed of Joint Undertaking (DJU) [Book 3 of 3, Part-2]
14.	Form of Bank Guarantee by Executants of DJUs other than Contractor
15.	Form of Bank Guarantee Verification Check List
16.	Form of Validity Extension of Bank Guarantee
17.	Form of Indemnity-Cum-Undertaking Agreement (Removal/Disposal of Scrap/Surplus Material)

BID FORM

ENVELOPE-II (PRICE BID)

BID FORM ENVELOPE-II (PRICE) BID

IFB No: _____

Proposal Ref. No......

Date:

Name of Package : **EPC Package for KODERMA THERMAL POWER STATION
PHASE-II (2x800MW):**

**Bidding Document No. :
DVC/C&M/Engineering/KTPS(2X800 MW)/EPC/IPHB**

To

Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Gentlemen and/or Ladies,

1.0 Having examined the **Bidding Documents No. DVC/C&M/Engineering/KTPS(2X800 MW)/EPC/IPHB**, including subsequent amendments and clarifications if any, the receipt of which is hereby acknowledged, we the undersigned, offer to design, manufacture, test, deliver, construct, install and commission (including carrying out Guarantee Test) the facilities under the above-named Contract in full conformity with the said Bidding Documents for the sum as mentioned in Bid invitation at <https://etenders.gov.in/eprocure/app> site or such other sums as may be determined in accordance with the terms and conditions of the Contract.

1.1 We further understand that discount letter, if any, separately uploaded online or submitted in physical form shall not be considered for the purpose of evaluation.

2.0 COMPLIANCE TO THE PROVISIONS OF THE BIDDING DOCUMENTS

2.1 We have read all the provisions of the Bidding Documents and confirm that notwithstanding anything stated elsewhere in our bid to the contrary, the provisions of the Bidding Documents, are acceptable to us and we further confirm that we have not taken any deviation to the provisions of the Bidding Documents anywhere in our bid.

Any deviation, variation or additional condition etc. or any mention, contrary to the provisions of Bidding Documents and its subsequent Amendment(s)/ Clarification(s)/Addenda/Errata (if any) found anywhere in our bid proposal, implicit or explicit shall stand unconditionally withdrawn, without any cost implication whatsoever to the Employer, failing which our bid shall be rejected and our Bid Security shall be forfeited.

2.2 We further declare that additional conditions, variations, deviations, if any, found anywhere in the proposal, shall not be given effect to.

3.0 We are aware that the BOQ/Price Schedules do not generally give a full description of the work to be performed under each item and we shall be deemed to have read the Technical Specifications, Drawings and other sections of the Bidding Documents to ascertain the full scope of work included in each item while filling in the rates and prices. We agree that the entered rates and prices shall be deemed to include the full

scope as aforesaid, including overheads and profit.

- 3.1 We understand that in the price schedules, where there are discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between subtotals and the total price, (even in case of carry forward of prices) the unit or subtotal price shall prevail and the total price shall be corrected accordingly. We further understand that where there is a discrepancy between amounts stated in figures and amounts stated in words, the amount stated in words shall prevail. Similarly, in case of any discrepancies between the total bid price and the summation of Schedule prices (price indicated in a Schedule indicating the total of that Schedule), the total bid price shall be corrected to reflect the actual summation of the Schedule prices.
- 3.2 We declare that prices left blank in the Schedules will be deemed to have been included in the prices of other items. The TOTAL price indicated in the BOQ shall be deemed to be the total price for executing the Facilities in complete accordance with the Contract, whether or not each individual item has been priced.
- 4.0 We hereby confirm that the rates/prices quoted by us in Schedule-9 (Schedule of Take Out Prices) and Schedule-10 (Schedule of Unit Rates) are consistent with the lumpsum bid price and that we shall furnish all necessary justification to establish the reasonableness of these rates/prices, if required by you. However, we clearly understand that the acceptance of our proposal for the subject package shall not mean automatic acceptance of these rates/prices and that these rates/prices shall be adopted only if their reasonableness has been established by us and accepted by you.
- 5.0 Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Name and address of agent	Amount and Currency	Purpose of Commission or gratuity

(If none, state "none")

- 6.0 Until a formal Contract is prepared and executed between us, this bid, together with your written acceptance thereof in the form of your Notification of Award shall constitute a binding contract between us.
- 7.0 We understand that you are not bound to accept the lowest or any other bid you may receive.
- 8.0 We, hereby, declare that only the persons or firms interested in this proposal as principals are named here and that no other persons or firms other than those mentioned herein have any interest in this proposal or in the Contract to be entered into, if the award is made on us, that this proposal is made without any connection with any other person, firm or party likewise submitting a proposal, is in all respects for and in good faith, without collusion or fraud.

Dated this.....day of. 20.....

Thanking you, we remain,

Yours faithfully,

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO. : DVC/C&M/Engineering/KTPS(2X800 MW)/EPC/IPHB**

Bidder's Name and Address:

To

Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department,
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

Dear Sir,

1. We confirm that we have read and understood Clause No. 10.6 of ITB, Sec-II of Bidding Document and we are submitting our bid including price schedules accordingly.
2. The details of Import Content included in Schedule-2 of our bid price are as follows:

Sl. No	Description of Items	Quantity	*Value (including in our Bid)

These details are furnished for the purpose of issuance of the Required Certificate as per ITB Clause 10.6. We further confirm that we shall be solely responsible for availing benefits (If Available).

Note: Bidder may apprise themselves of provisions of bidding documents regarding "Preference to Make in India and Eligibility for Participation/ granting of Purchase Preference to Class-I local suppliers" before submission of bid

*Please state the currency and fill in the amount in figures and words.

Date: (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO. : DVC/C&M/Engineering/KTPS(2X800
MW)/EPC/IPHB**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sir,

1. We confirm that we have read and understood Clause No. 10.6 of ITB, Sec-II of Bidding Document and we are submitting our bid including price schedules accordingly.
2. We confirm that we are solely responsible for obtaining the Customs Duty Benefits for import of Construction Equipment which we have considered in our bid and in case of failure to receive such benefits, Employer will not compensate us in any manner whatsoever.
3. We further confirm that we will not claim for adjustment in Contract Price on account of variation in or withdrawal of Custom Duty Benefits for Import of Construction Equipment.
4. We are furnishing below the information required by the Employer for issue of relevant Certificates in terms of the Customs Act & Notification of the Govt. of India :
(A) *CIF Value of Construction Equipment to be imported by the Bidder/Assignee (if applicable in case of foreign bidder) including its sub-contractor(s) of the Bidder/Assignee.

.....
.....
.....

We further confirm that aforesaid CIF value has not been included in Attachment-1(P).

* Please state the currency and fill in the amount in figures and words.

(B) Description and quantities of the Construction Equipment to be imported by the Bidder / Assignee (if applicable) / sub-contractor(s) for deployment to site under the package.

Sl. No	To be imported by	Description of Quantity No.	item to be imported

(i) Bidder

(ii) Assignee (if applicable)

(iii) Sub-contractor(s)

5. We confirm that the Construction Equipment being imported as per 'B' above shall be deployed at the Project Site for the purpose of execution of subject Package.

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

Note : Continuation sheets of like size and format may be used as per Bidders requirements and shall be annexed to this Attachment

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO. : DVC/C&M/Engineering/KTPS(2X800
MW)/EPC/IPHB
(Details of Equipment and Mandatory Spares to be imported from
Associate/Collaborator by manufacturer or bidder)**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,

Dear Sirs,

We confirm that we are seeking qualification on the basis of association/collaboration with the manufacturer(s) of particular equipment(s). We further confirm that such equipment and mandatory spares, which shall be imported from the associate's/collaborator's country by the manufacturer or by us have been listed in this Attachment-7(P) and the price of such equipment and mandatory spares including type test(s) have been quoted on CIF (Indian port-of-entry) basis and included in the total CIF (Indian port-of-entry) price quoted by us in Schedule-1.

Sl.No.	Description of Equipment/ Mandatory Spare/Type Test	Quantity/Weight	Value in bid currency*

*** Total**

Date :

(Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal)

- Note :
1. This Attachment is to be filled in by all bidders.
 2. *Bidder shall state the currency and fill in the amount in words and figures.
 3. Continuation sheets of like size and format may be used as per Bidder's requirement and shall be annexed to this Attachment.
 4. Bidder may refer ITB Cl. 10.4 (a) also.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
BIDDING DOCUMENT NO. : DVC/C&M/Engineering/KTPS(2X800
MW)/EPC/IPHB
(Declaration on Commissioning Fuel i.e. Coal & Oil requirements)**

Deleted

EPC PACKAGE

FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS(2X800 MW)/EPC/IPHB

(Details in respect of Local Agent)

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department,
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

Dear Sir,

We furnish below the following information in respect of our Local Agent:

(i) Name and address of the Local Agent

.....

.....

.....

(ii) Services to be rendered by the Local Agent

.....

.....

.....

(iii) Amount

Date :

(Signature).....

Place :

(Printed Name).....

(Designation).....

(Common Seal)

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**

BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS(2X800 MW)/EPC/IPHB

(Price Adjustment Data)

Bidder's Name and Address:

To

Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department,
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

Dear Sirs,

We hereby furnish the relevant details pertaining to the price adjustment provisions in your bidding documents.

1A. Ex-Works / FOB Price Component of Plant and Equipment including spares, but excluding Type Tests Charges (Steam Generator Systems excl. Factory Fabricated Structures, Electrical Systems and C&I System as specified in Technical Specification and in coherence to Price Schedule)

BIDDERS ARE REQUIRED TO INDICATE SEPARATE INDICES FOR EACH CURRENCY.

*Name of Currency of Bid Price ::

Sl. No.	Item	Value of Co-efficient	Name of Published Index and its origin	Value of Indices (as on 30 days prior to date set for Submission of Techno-Commercial
Material				
1.	#.....	a =	.....	.....
2.	#.....	b =	.....	.....
3.	#.....	c =	.....	.....
				
				
Labour		Lb =		.....
Fixed Component		F = 0.15		

Sum of all material co-efficients, i.e. a+b+c+..... etc. indicated above shall be between 0.50 to 0.60.

To be specified by Bidder.

@Use separate sheets for FOB/ FOB / Ex-Works excluding Import Content / Import Content (if any) in Ex-works price.

The labour co-efficient shall be between 0.25 to 0.35.

Attachment-5(P)

Sum of all material co-efficients and labour coefficient shall be 0.85.

Sum of all material co-efficients, labour coefficient and fixed component should be 1.0

1B. Deleted

1C. *Ex-Works / FOB Price Component of Plant and Equipment including spares, but excluding Type Tests Charges (Balance of Plant Systems excl. Factory Fabricated Structures, Electrical Systems and C&I System as specified in Technical Specification and in coherence to Price Schedule)*

BIDDERS ARE REQUIRED TO INDICATE SEPARATE INDICES FOR EACH CURRENCY.

*Name of Currency of Bid Price ::

Sl. No.	Item	Value of Co-efficient	Name of Published Index and its origin	Value of Indices (as on 30 days prior to date set for Submission of Techno-Commercial
Material				
1.	#.....	a =	.....	.....
2.	#.....	b =	.....	.....
3.	#.....	c =	.....	.....
				
				
Labour		Lb =		.....
Fixed Component		F = 0.15		

Sum of all material co-efficients, i.e. a+b+c+..... etc. indicated above shall be between 0.50 to 0.60.

To be specified by Bidder.

@Use separate sheets for FOB/ Ex-Works excluding Import Content / Import Content (if any) in Ex-works price.

The labour co-efficient shall be between 0.25 to 0.35.

Sum of all material co-efficients and labour coefficient shall be 0.85.

Sum of all material co-efficients, labour coefficient and fixed component should be 1.0

1D. Ex-Works / FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Electrical Systems and C&I System as specified in Technical Specification and in coherence to Price Schedule)

BIDDERS ARE REQUIRED TO INDICATE SEPARATE INDICES FOR EACH CURRENCY.

*Name of Currency of Bid Price ::

Sl. No.	Item	Value of Co-efficient	Name of Published Index and its origin	Value of Indices (as on 30 days prior to date set for Submission of Techno-Commercial

Material

1.	#.....	a =	.....	.....
2.	#.....	b =	.....	.....
3.	#.....	c =	.....	.....
				
				

Labour

Lb = ...

Fixed Component

F = 0.15

Sum of all material co-efficients, i.e. a+b+c+..... etc. indicated above shall be between 0.50 to 0.60.

To be specified by Bidder.

@Use separate sheets for FOB / Ex-Works excluding Import Content / Import Content (if any) in Ex-works price.

The labour co-efficient shall be between 0.25 to 0.35.

Sum of all material co-efficients and labour coefficient shall be 0.85.

Sum of all material co-efficients, labour coefficient and fixed component should be 1.0

1E. Ex-Works/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Factory Fabricated Structures as specified in Technical Specification and in coherence to Price Schedule)

BIDDERS ARE REQUIRED TO INDICATE SEPARATE INDICES FOR EACH CURRENCY.

*Name of Currency of Bid Price ::

Sl. No.	Item	Value of Co-efficient	Name of Published Index and its origin	Value of Indices (as on 30 days prior to date set for Submission of Techno-Commercial
Material				
1	Hot Rolled Coils & Sheets.	a =0.45	Index for "Hot Rolled (HR) Coils & Sheets, including Narrow Strip" under sub-group of "Mild Steel -Flat Products" under Group of "Manufacture of Basic Metals" as published by Ministry of Commerce and Industry, GOI	.....
2.	Manufacture of fabricated metal products- Structural metal product	b=0.15	Index for "Manufacture of structural metal products" under Group of "Manufacture of Fabricated metal products, except Machinery and Equipment" as published by Ministry of Commerce and Industry, GOI	.....
	Labour	Lb =0.25	Consumer price index for industrial workers (All India General) as published by Labour Bureau, Shimla.	.....
	Fixed Component	F = 0.15		

1F. Ex-Works {Ex-works excluding Import Content / Import Content (if any) in Ex-works separately} /FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Any other Items not covered in A to E above and in coherence to Price Schedule)

BIDDERS ARE REQUIRED TO INDICATE SEPARATE INDICES FOR EACH CURRENCY.

*Name of Currency of Bid Price ::

Sl. No.	Item	Value of Co-efficient	Name of Published Index and its origin	Value of Indices (as on 30 days prior to date set for Submission of Techno-Commercial
Material				
1.	#.....	a =	.....	.....
2.	#.....	b =	.....	.....
3.	#.....	c =	.....	.....
				
				
	Labour	Lb =		.....
	Fixed Component	F = 0.15		

Sum of all material co-efficients, i.e. a+b+c+..... etc. indicated above shall be between 0.50 to 0.60.

To be specified by Bidder.

@Use separate sheets for FOB / Ex-Works excluding Import Content / Import Content (if any) in Ex-works price.

The labour co-efficient shall be between 0.25 to 0.35.

Sum of all material co-efficients and labour coefficient shall be 0.85.

Sum of all material co-efficients, labour coefficient and fixed component should be 1.0

2. ERECTION PRICE COMPONENT

(A) INDIAN FIELD LABOUR :

The indices used for Indian Field Labour are (i) All India Consumer Price Index for Industrial Workers (All India Monthly Average) published by Labour Bureau, Simla, Government of India and (ii) Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher.

Attachment-5(P)

i. The value of the All India Consumer Price Index for Industrial Workers (All India Monthly Average) published by Labour Bureau, as on 30 days prior to the deadline set for opening of the bids is.....

ii. The value of the Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher, as on 30 days prior to the deadline set for opening of the bids is.....

(C) ****EXPATRIATE LABOUR :**

* Name of currency of Bid Price :

The name of published index and its origin used for expatriate Labour (EF) is.....

3. Structural Work Price Component

Sl. No.	Item	Value of Co-efficient	Name of Published index and its origin	Value of Indices (as on 7 days prior to deadline set for submission of bids)
1.	Fixed Components	F = 0.20		.....
2.	Hot Rolled Coils & Sheets	a = 0.50	Index for "Hot Rolled (HR) Coils & Sheets, including Narrow Strip" under sub-group of "Mild Steel -Flat Products" under Group of "Manufacture of Basic Metals" as published by Ministry of Commerce and Industry, GOI	.....
3.	Manufacture of fabricated Metal Products-Structural Metal Product	b = 0.15	Index for "Manufacture of structural metal products" under Group of "Manufacture of Fabricated metal products, except Machinery and Equipment" as published by Ministry of Commerce and Industry, GOI	.....
4.	Labour			
	(i)	0.5 x Lb = 0.5 x 0.15	Consumer price index for industrial workers (All India General) as published by	.....

Labour Bureau, Shimla.

- (ii) $0.5 \times L_b = 0.5 \times 0.15$ Arithmetical average of
 Minimum Wages for Unskilled, Skilled,
 Semi-skilled and Highly skilled workers
 notified by the Central Government for
 the particular
 classified Area in which the project site
 is located or notified by the State Government of
 the state in which the project site is located,
 whichever is higher

4. Civil Works Price Component :

Item	Index	Value of Coefficients	Name of published index and its	Value of Indices (as on 7 days prior to deadline set for submission of bids)
1.	Labour			
	(i) $0.5 \times L_b = 0.5 \times 0.25$		Consumer price index for industrial workers (All India General) as published by Labour Bureau, Shimla.	.....
	(ii) $0.5 \times L_b = 0.5 \times 0.25$		Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher	
2.	Material (excluding cement & steel)	$m = 0.15$	Index no. of wholesale Price under group "All Commodities" as published by Ministry of Commerce and Industry, GOI	.....
3.	High Speed Diesel	$d = 0.05$	Price of high speed diesel oil per litre at the Indian Oil Corpn. outlet nearest to the project (selling price inclusive of taxes & duties, if any)	.....
4.	Steel	$s = 0.25$	Index for "Mild Steel -Long Products" / "Mild Steel-Flat Products under Group of Products as published by Ministry of Commerce and Industry, GOI.	.....

Attachment-5(P)

5. Cement $c = 0.10$ Index for "Pozzolana Cement"
as published by Ministry
of Commerce and Industry, GOI.

5. We agree to provide you with a complete break-up of our Bid Price to enable operation of Price adjustment Clause for aforesaid all price components.

* Continuation sheets of like size & format shall be used, if required, in case number of currencies are more.

** Continuation sheets of like size and format may be used if countries of origin of expatriate labour are more.

Date : (Signature).....
Place : (Printed Name).....
(Designation).....
(Common Seal).....

Note : Bidder shall note that it is mandatory to furnish the values of various coefficients and name, source & origin of the published indices and its base values in this Attachment-5(P) to Bid. Bidder is also required to mention whether the indices are monthly average, weekly average or as applicable.

**EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**

**BIDDING DOCUMENT NO. : DVC/C&M/Engineering/KTPS(2X800
MW)/EPC/IPHB**

Bidder's Name and Address :

To
Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal Dear Sirs,

Check List of documents to be submitted for Envelope-III (Price) Bid

Sl.	Details of Checks	Enclosed : Yes / No No.
1.	Bid Form Envelope-III (Price) Bid	.....
2.	Attachment-1(P):	.....
3.	Attachment-1A(P)	.....
3.	Attachment-2(P):	.....
4.	Attachment-3(P):	Deleted.....
5.	Attachment-4(P)	.....
6.	Attachment-5(P):	.....
6.	All Price Schedules	.....

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Company Seal)

PRICE SCHEDULES

Damodar Valley Corporation

(Established by the ACT XIV of 1948)



BIDDING DOCUMENTS

FOR

EPC PACKAGE

FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

SECTION - VII

BOOK 3 OF 3 (PART-1)

BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS (2X800 MW)/EPC/IPHB

BIDDING DOCUMENTS
FOR
EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)
SECTION - VII BOOK 3 OF
3 (PART-1)

BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS (2X800 MW)/EPC/IPHB

(This document is meant for the exclusive purpose of bidding against this Bid Document No. / Specification and shall not be reproduced or otherwise used for purposes other than that for which it is specifically issued).

TABLE OF FORMS AND PROCEDURES

Sl.No.	Description
1.	(i) Bid Form (Techno-Commercial Bid) along with Attachments [enclosed as Section-VII, Book 1 of 3]
	(ii) Bid Form (Price Bid) along with Attachments & Price Schedules [enclosed as Section-VII, Book 2 of 3]
	Book 3 of 3 consisting of the following:
	Book 3 of 3 [Part 1]
2.	Bid Security Form - Bank Guarantee
2a.	Bid Security Form Letter of Credit
2b.	Bid Security Form – Insurance Surety Bond
3.	(a) Form of Notification by the Employer to the Bidder (b) Form of Sight Draft
4.	Forms of Notification of Award
5.	Form of Contract Agreement
6.	Performance Security Forms
6a.	Performance Security Form for Phased Manufacturing Programme (PMP)
7.	(i) Bank Guarantee Form for Advance Payment (Supply-FOB/Ex-works)
7.	(ii) Bank Guarantee Form for Advance Payment (Installation Services / Civil / Structural Works)
8.	Form of Completion Certificate
9.	Form of Operational Acceptance Certificate
10.	Form of Trust Receipt
11.	Forms of Indemnity Bond (3 Nos.)
12.	Form of Authorization Letter
13.	Forms of Deed of Joint Undertaking (DJU) [Book 3 of 3, Part-2]
14.	Form of Bank Guarantee by Executants of DJUs other than Contractor
15.	Form of Bank Guarantee Verification Check List
16.	Form of Validity Extension of Bank Guarantee
17.	Form of Indemnity Bond (Removal/Disposal of Scrap/Surplus Material)
18.	Form of Contract Closing Certificate
19.	Electronic Fund Transfer Form

- 20. Deleted
- 21. Declaration Of Absence Of Conflict Of Interest With INDEPENDENT ENGINEER (IE)-
Not Applicable
- 22. Deleted

Note : Sl. No. 2 to 20 (except Sl. No. 13) are in Book 3 of 3 (Part-1) and Sl. No. 13 (DJU Forms) is in Book 3 of 3, (Part-2)

2. BID SECURITY FORM

2. Bid Security Form

Bank Guarantee

(To be stamped in accordance with Stamp Act,
if any, of the Country of the issuing Bank)

Bank Guarantee No.

Date.....

To

Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department,
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

Dear Sirs,

In accordance with Invitation for Bids under your Bid Document No., M/s..... having its Registered/Head Office at (hereafter called the 'Bidder') wish to participate in the said bid for *[Name of Contract Package]*.....

As an irrevocable Bank Guarantee against Bid Security for an amount of (*) valid for days from (**) is required to be submitted by the Bidder as a condition precedent for participation in the said bid which amount is liable to be forfeited on the happening of any contingencies mentioned in the Bidding Documents.

We, the*[Name & address of the Bank]* having our Head Office at.....(##)..... guarantee and undertake to pay immediately on demand by.....*[Name of the Employer]*..... (hereafter called the 'Employer') the amount of(*).....without any reservation, protest, demand, demur and recourse. Any such demand made by the 'Employer' shall be conclusive and binding on us irrespective of any dispute or difference raised by the Bidder.

This Guarantee shall be irrevocable and shall remain valid up to(@)..... If any further extension of this Guarantee is required, the same shall be extended to such required period (not exceeding one year) on receiving instructions from M/s *[Bidder's Name]*..... on whose behalf this Guarantee is issued.

In witness whereof the Bank, through its authorised officer, has set its hand and stamp on this.....day of.....20.....at.....

.....
(Signature)

.....
(Name)

.....
(Designation
with Bank
Stamp)

Authorised Vide
Power of Attorney
No.....
Date.....
.....

- NOTE :
1. (*) The amount shall be as specified in the Bid Data Sheets. (**) This shall be the date of opening of bids.
(#) Complete mailing address of the Head Office of the Bank to be given.
(@) This date shall be forty five (45) days after the last date for which the bid is valid.
 2. The Bank Guarantee shall be from a Bank as per provisions of ITB Sub-Clause 12.2 of the Bidding Documents.
 3. The BG should be on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG is executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Bidder/Bank issuing the guarantee.
 4. While getting the Bank Guarantee issued, Bidders are required to ensure compliance to the points mentioned in Form 15-Form of Bank Guarantee Verification Check List enclosed in Section-VII of Bidding Documents. Further, Bidders are required to fill up this Form 15 and enclose the same with the Bank Guarantee.

FORM No. 2 (a)

BID SECURITY FORM - LETTER OF CREDIT

(Deleted)

2b. Form of Insurance Surety Bond towards Bid Security

(To be stamped in accordance with Stamp Act of India)

Insurance Surety Bond No.

Date.....

To

Damodar Valley Corporation,
(Established by the ACT XIV of 1948)
Chief Engineer, C&M Department,
3rd Floor, DVC Towers, VIP Road,
Kolkata, West Bengal

Dear Sirs,

In accordance with Invitation for Bids under your Bid Document No., M/s..... having its Registered/Head Office at (hereafter called the 'Bidder') wish to participate in the said bid for EPC PACKAGE FOR KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

As an irrevocable Insurance Surety Bond against Bid Security for an amount of.....(*).....valid for 225 days from(**)..... required to be submitted by the Bidder as a condition precedent for participation in the said bid which amount is liable to be forfeited on the happening of any contingencies as mentioned under the Bidding Documents.

We, the [*Name & address of the Insurer*] having our Head Office at (#) guarantee and undertake to pay immediately on demand by DVC (hereafter called the 'Employer') the amount of(*)..... without any reservation, protest, demand and recourse. Any such demand made by the 'Employer' shall be conclusive and binding on us irrespective of any dispute or difference raised by the Bidder and/or any right/remedy available to the bidder in terms thereof.

This Insurance Surety Bond shall be unconditional as well as irrevocable and shall remain valid upto(@)..... If any further extension of this Insurance Surety Bond is required, the same shall be extended to such required period (not exceeding one year) on receiving instructions from M/s [*Bidder's Name*]..... on whose behalf this Insurance Surety Bond is issued.

In witness where of the Insurer, through its authorised officer, has set its hand and stamp on this.....day of.....20.....at.....

.....
(Signature)

.....
(Name)

.....
(Designation with
Insurer Stamp)

Authorised Vide
Power of Attorney No.....

Date.....

- NOTE :
1. (*) The amount shall be as specified in the Bid Data Sheets. (**) This shall be the date of opening of bids.
(#) Complete mailing address of the Head Office of the Insurer to be given.
(@) This date shall be forty five (45) days after the last date for which the bid is valid.
 2. The Insurance Surety Bond shall be from an Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI) as amended from time to time.
 3. The Employer shall be the Creditor, the Bidder shall be the Principal debtor and the Insurance company/Insurer shall be the Surety in respect of the Insurance Surety Bond to be issued by the Insurer.
 4. The Insurance Surety Bond should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the state(s) where the Insurance Surety Bond is submitted or is to be acted upon or the rate prevailing in State where the Insurance Surety Bond is executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Bidder/Insurer issuing the Insurance Surety Bond.
 5. While getting the Insurance Surety Bond issued, Bidders are required to ensure compliance to the points mentioned in Form of Bank Guarantee/Insurance Surety Bond Verification Check List enclosed in this Section of Bidding Documents. Further, Bidders are required to fill up this Form and enclose the same with the Insurance Surety Bond.

**3. (a) FORM OF NOTIFICATION BY THE
EMPLOYER TO BIDDER**

(b) FORM OF SIGHT DRAFT

-DELETED-

4. FORMS OF NOTIFICATION OF AWARD

4a. FORM OF 'NOTIFICATION OF AWARD OF CONTRACT' FOR SUPPLY OF PLANT AND EQUIPMENTS

(This form shall apply mutatis-mutandis for both First Contract and Second Contract)

NOTE : *INSTRUCTIONS INDICATED IN ITALICS IN THIS NOTIFICATION OF AWARD ARE TO BE TAKEN CARE OF BY THE ISSUING AUTHORITY.*

Ref. No. :

Date :

.....(Contractor's Name & Address).....

Attn : Mr.....

Sub : Notification of Award of Contract for Supply of..... (Package Name)
..... as per Bidding Document No.....

Dear Sir,

1.0 This has reference to the following:

- (i) Our Invitation for Bids (IFB) No. dated.....
- (ii) Bidding Documents for the subject package issued to you vide our letter no. dated..... comprising the following :

.....(List out all the Sections/Volumes of the Bidding Documents along with Tender Drawings etc. as issued to the bidder).....

Errata/Amendment No..... to..... (***Name of Section/Volume of the Bidding Documents to which Errata/Amendment pertains***)..... issued to you vide our letter no. dated

(Applicable only if any Errata/Amendment to the Bidding Documents has been issued subsequently)

- (iii)** Clarifications furnished to you on the Bidding Documents vide our letter no..... dated based on the query raised by **you/one of the prospective bidders. (Use as applicable)**
(Applicable only if any clarification to the Bidding Documents has been issued subsequently)

(INCLUDE AS FURTHER SUB-PARAGRAPHS ANY OTHER APPLICABLE CORRESPONDENCE MADE TO THE BIDDER AFTER ISSUANCE OF BIDDING DOCUMENTS UP TO THE DATE OF BID OPENING)

- (iv) Your Proposal for the subject package submitted vide your letter No.
dated..... **and its modification vide letter no.**
dated (Delete if not applicable).

- (v) Our Fax message/letter No. dated..... regarding extension of validity of bid and that of the Bank Guarantee towards Bid Security.

(Applicable only if any extension has been sought subsequently)

(INCLUDE AS FURTHER SUB-PARAGRAPHS ANY OTHER APPLICABLE CORRESPONDENCE MADE TO OR BY THE BIDDER AFTER BID OPENING)

- (vi) Our Fax message/letter No. dated..... inviting you for post bid discussions.
- (vii) Post bid discussions and meetings we had with you from to resulting into the following Minutes of Meetings enclosed herein with this Notification of Award :
- (a) Minutes of Meetings regarding Commercial issues (APPENDIX -)
 - (b) Minutes of Meetings on Technical issues (APPENDIX -)
 - (c) Minutes of Meetings regarding Work Schedule (APPENDIX -)
 - (d) Minutes of Meetings regarding Quality Assurance Aspects (APPENDIX -.)
 - (e) Minutes of Meeting regarding Safety Plan (APPENDIX - ...)

2.0 We confirm having accepted your proposal submitted vide letter no. dated **and its modification vide letter no. dated (*Delete if not applicable*)** read in conjunction with all the specifications, terms & conditions of the Bidding Documents, **Your subsequent letters (*Use if relevant*)** and agreed Minutes of Meetings referred to in para 1.0 above and award on you the Contract for the work of(***Indicate brief Scope of Work***) of (***Name of Package***) for (***Name of project***)..... as per Specification No. :..... (hereinafter referred to as the 'First Contract').

3.0 We have also notified you vide our Notification of Award No. dated and Notification of Award No..... dated..... for award of Second Contract and Third Contract respectively on you for the work of (***Indicate brief scope of work of the Second Contract and Third Contract***) complete (***Name of Package***)..... for (***Name of Project***) as per Bidding Document No..... (hereinafter referred to as the 'Second Contract' and 'Third Contract'). You shall also be fully responsible for the works to be executed under the 'Second Contract' and 'Third Contract' and it is expressly understood and agreed by you that any breach under the 'Second Contract' and/or 'Third Contract' shall automatically be deemed as a breach of this 'First Contract' and vice-versa and any such breach or occurrence or default giving us a right to terminate the 'Second Contract' and 'Third Contract' and/or recover damages thereunder, shall give us an absolute right to terminate this Contract and/or recover damages under this 'First Contract' as well and vice-versa. However, such breach or default or occurrence in the 'Second Contract' and/or 'Third Contract' shall not automatically relieve you of any of your responsibilities/obligations under this 'First Contract'. It is also expressly understood and agreed by you that the equipments/materials to be supplied by you under this Contract when installed and commissioned under the 'Third Contract' shall give satisfactory performance in accordance with the provisions of the Contract.

4.0 The Total Contract Price for the entire scope of work under the Contract shall be**(Specify the amount and currency)**..... as per the following break up :

(i) **Ex-Manufacturing Works/Place of Despatch Price (both in India)/ CIF (Indian Port-of Entry) Price (Use as Applicable)**
for Main Equipment

(ii) **Ex-Manufacturing Works/Place of Despatch Price (both in India)/ CIF (Indian Port-of Entry) Price (Use as Applicable)**
for Mandatory Spares

(iii) Type Test Charges
(Delete if not applicable)

TOTAL (i + ii + iii)

(.....**(Specify the total amount in words)**.....)

5.0 You shall prepare and finalise the Contract Documents for signing of the formal Contract Agreement and shall enter into the Contract Agreement with us, as per the proforma enclosed with the Bidding Documents, on non-judicial stamp paper of appropriate value within.....**(Specify)**.....days from the date of this Notification of Award.

6.0 We request you to return a copy of this Notification of Award digitally signed/duly signed and stamped on each page including all the enclosed Appendices, by the authorised signatory of your company as a proof of your acknowledgement.

Please take necessary action to commence the work and confirm action.

Yours faithfully,
for and on behalf of
.....**(Name of the Employer)**.....

(Authorised Signatory)

Encl. : As above.

**4b. FORM OF 'NOTIFICATION OF AWARD OF CONTRACT' FOR
INSTALLATION OF PLANT AND EQUIPMENTS**

NOTE : ***INSTRUCTIONS INDICATED IN ITALICS IN THIS NOTIFICATION OF AWARD
ARE TO BE TAKEN CARE OF BY THE ISSUING AUTHORITY.***

Ref. No. :

Date :

.....(***Contractor's Name & Address***).....
.....
.....
.....

Attn : Mr.....

**Sub : Notification of Award of Contract for Inland Transportation, Insurance, Installation,
Testing & Commissioning and Guarantee Tests of (*Package Name*)
..... as per Bidding Document No.....**

Dear Sir,

1.0 This has reference to the following :

- (i) Our Invitation for Bids (IFB) No. dated.....
- (ii) Bidding Documents for the subject package issued to you vide our letter no.
..... dated..... comprising the following :

***.....(List out all the Sections/Volumes of the Bidding Documents
along with Tender Drawings etc. as issued to the bidder).....***

Errata/Amendment No..... to..... (***Name of Section/Volume of
the Bidding Documents to which Errata/Amendment pertains***)..... issued
to you vide our letter no. dated.....

***(Applicable only if any Errata/Amendment to the Bidding Documents has been
issued subsequently)***

- (iii) Clarifications furnished to you on the Bidding Documents vide our letter
no..... dated based on the query raised by **you/one of
the prospective bidders. (Use as applicable)**
***(Applicable only if any clarification to the Bidding Documents has been issued
subsequently)***

***(INCLUDE AS FURTHER SUB-PARAGRAPHS ANY OTHER APPLICABLE
CORRESPONDENCE MADE TO THE BIDDER AFTER ISSUANCE OF BIDDING
DOCUMENTS UP TO THE DATE OF BID OPENING)***

- (iv) Your Proposal for the subject package submitted vide your letter No.
dated **and its modification vide letter no. dated
..... (*Delete if not applicable*).**

- (v) Our Fax message/letter No. dated..... regarding extension of validity of bid and that of the Bank Guarantee towards Bid Security.

(Applicable only if any extension has been sought subsequently)

(INCLUDE AS FURTHER SUB-PARAGRAPHS ANY OTHER APPLICABLE CORRESPONDENCE MADE TO OR BY THE BIDDER AFTER BID OPENING)

- (vi) Our Fax message/letter No. dated..... inviting you for post bid discussions.
- (vii) Post bid discussions and meetings we had with you from to resulting into the following Minutes of Meetings enclosed herein with this Notification of Award :
- (a) Minutes of Meetings regarding Commercial issues (APPENDIX -)
 - (b) Minutes of Meetings on Technical issues (APPENDIX -)
 - (c) Minutes of Meetings regarding Work Schedule (APPENDIX -)
 - (d) Minutes of Meetings regarding Quality Assurance Aspects (APPENDIX-.)
 - (e) Minutes of Meeting regarding Safety Plan (APPENDIX - ...)

2.0 We confirm having accepted your proposal submitted vide letter no. dated **and its modification vide letter no..... dated** ***(Delete if not applicable)*** read in conjunction with all the specifications, terms & conditions of the Bidding Documents, **Your subsequent letters *(Use if relevant)*** and agreed Minutes of Meetings referred to in para 1.0 above and award on you the Contract for the work of ***(Indicate brief Scope of Work)*** of ***(Name of Package)*** for ***(Name of project)*** as per Specification No. : (hereinafter referred to as the 'Third Contract').

3.0 We have also notified you vide our Notification of Award No. dated and Notification of Award No..... dated..... for award of 'First Contract' and 'Second Contract' respectively on you for the work of ***(Indicate brief scope of work of the First Contract and Second Contract)*** complete ***(Name of Package)*** for ***(Name of Project)*** as per Bidding Document No..... (hereinafter referred to as the 'First Contract' and 'Second Contract'). You shall also be fully responsible for the works to be executed under the 'First Contract' and 'Second Contract' and it is expressly understood and agreed by you that any breach under the 'First Contract' and/or 'Second Contract' shall automatically be deemed as a breach of this 'Third Contract' and vice-versa and any such breach or occurrence or default giving us a right to terminate the 'First Contract' and/or 'Second Contract' and/or recover damages thereunder, shall give us an absolute right to terminate this Contract and/or recover damages under this 'Third Contract' as well and vice-versa. However, such breach or default or occurrence in the 'First Contract' and/or 'Second Contract' shall not automatically relieve you of any of your responsibilities/obligations under this 'Third Contract'. It is also expressly understood and agreed by you that the equipments/materials to be supplied by you under the 'First Contract' and 'Second Contract' when installed and commissioned under this 'Third Contract' shall give satisfactory performance in accordance with the provisions of the Contract.

4.0 The Total Contract Price for the entire scope of work under the Contract shall be**(Specify the amount and currency)**..... as per the following break up :

- (i) Inland Transportation and Inland Transit Insurance Charges
including Port Clearance, Port Handling and Port Charges (Delete if not applicable) for Main Equipment
- (ii) Inland Transportation and Inland Transit Insurance Charges
including Port Clearance, Port Handling and Port Charges (Delete if not applicable) for Mandatory Spares
- (iii) Unloading and Handling at Site, Storage, Erection, Civil Structural & Allied Works, Insurance Covers other than Inland Transit Insurance, Testing, Commissioning and conducting Guarantee Tests
- TOTAL (i + ii + iii)
- (.....**(Specify the total amount in words)**.....)

5.0 You shall prepare and finalise the Contract Documents for signing of the formal Contract Agreement and shall enter into the Contract Agreement with us, as per the proforma enclosed with the Bidding Documents, on non-judicial stamp paper of appropriate value within.....**(Specify)**.....days from the date of this Notification of Award.

6.0 We request you to return a copy of this Notification of Award digitally signed/duly signed and stamped on each page including all the enclosed Appendices, by the authorised signatory of your company as a proof of your acknowledgement.

Please take necessary action to commence the work and confirm action.

Yours faithfully,
for and on behalf of
.....**(Name of the Employer)**.....

(Authorised Signatory)

Encl. : As above.

5. FORM OF CONTRACT AGREEMENT

5. Form of Contract Agreement

THIS CONTRACT AGREEMENT is made the _____ day of _____, 20____.

BETWEEN

(1) *[Name of Employer]*, a corporation incorporated under the laws of *[country of Employer]* and having its principal place of business at *[address of Employer]* (hereinafter called "the Employer"), and

(2) *[name of Contractor]*, a corporation incorporated under the laws of *[country of Contractor]* and having its principal place of business at *[address of Contractor]* (hereinafter called "the Contractor")

WHEREAS the Employer desires to engage the Contractor to design, manufacture, test, deliver, install, complete and commission certain Facilities, viz. *[list of facilities]* ("the Facilities") and the Contractor have agreed to such engagement upon and subject to the terms and conditions hereinafter appearing.

NOW IT IS HEREBY AGREED as follows:

Article 1. Contract Documents

- 1.1 **Contract Documents** (Reference GCC Clause 2)
The following documents shall constitute the Contract between the Employer and the Contractor, and each shall be read and construed as an integral part of the Contract:
- (a) This Contract Agreement and the Appendices hereto
 - (b) Notification of Award
 - (c) Special Conditions of Contract
 - (d) General Conditions of Contract
 - (e) Technical Specifications and Drawings
 - (f) The Bid and Price Schedules submitted by the Contractor
 - (g) Procedures (as listed)
 - (h) Integrity Pact (IP) signed between the Employer and the Bidder/Contractor
- 1.2 **Order of Precedence** (Reference GCC Clause 2)
In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above.
- 1.3 **Definitions** (Reference GCC Clause 1)
Capitalized words and phrases used herein shall have the same meanings as are ascribed to them in the General Conditions of Contract.

Article 2. Contract Price and Terms of Payment

- 2.1 **Contract Price** (Reference GCC Clause 11)
The Employer hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations hereunder. The Contract Price shall be the aggregate of: *[amount of foreign currency in words]*, *[amount in figures]*, and *[amount of local currency in words]*, *[amount in figures]*, or such other sums as may be determined in accordance with the terms and conditions of the Contract.
- 2.2 **Terms of Payment** (Reference GCC Clause 12)

The terms and procedures of payment according to which the Employer will reimburse the Contractor are given in Appendix 1 (Terms and Procedures of Payment) hereto.

**Article 3. Effective 3.1
Date for Determining
Time for Completion**

Effective Date (Reference GCC Clause 1)

The Time of Completion of the Facilities shall be determined from the date of Notification of Award provided all of the following conditions have been fulfilled within a period of two (2) months from the date of said Notification of Award :

- (a) This Contract Agreement has been duly executed for and on behalf of the Employer and the Contractor;
- (b) The Contractor has submitted to the Employer the Performance Security, Security towards faithful performance of the Deed(s) of Joint Undertaking (if applicable) and the Advance Payment Security.
- (c) The Employer has paid the Contractor the Advance Payment.

Each party shall use its best efforts to fulfill the above conditions for which it is responsible as soon as practicable.

3.2 If the conditions listed under 3.1 are not fulfilled within two (2) months from the date of Notification of Award because of reasons attributable to the Employer, the Contract would become effective only from the date of fulfillment of all the above mentioned conditions and, the parties shall discuss and agree on an equitable adjustment to the Contract Price and the Time for Completion and/or other relevant conditions of the Contract.

3.3 However, if any of the conditions listed under 3.1 above are not fulfilled within two (2) months from the date of Notification of Award because of the reasons attributable to the contractor, the contract will become effective from the date of Notification of Award. In this case, Contract Price and/or time of completion shall not be adjusted.

Article 4.

It is expressly understood and agreed by and between the Contractor and the Employer that the Employer is entering into this Agreement solely on its own behalf and not on behalf of any other person or entity. In particular it is expressly understood and agreed that the Government of India is not a party to this Agreement and has no liabilities, obligations or rights hereunder. It is expressly understood and agreed that the Employer is an Independent legal entity with power and authority to enter into contracts solely on its own behalf under the applicable laws of India and the general principles of Contract Law. The Contractor expressly agrees, acknowledges and understands that the Employer is not an Agent, Representative or Delegate of the Govt. of India. It is further understood and agreed that the Government of India is not and shall not be liable for any acts, omissions, commissions, breaches or other wrongs arising out of the Contract. Accordingly, the Contractor expressly waives, releases and foregoes any and all actions or claims, including cross claims, impleader claims or counter claims against the

Government of India arising out of this Contract and covenants not to sue the Government of India as to any manner, claim, cause of action or thing whatsoever arising of or under this Agreement.

Article 5. Appendices

The Appendices listed in the attached list of Appendices shall be deemed to form an integral part of this Contract Agreement.

Reference in the Contract to any Appendix shall mean the Appendices attached hereto, and the Contract shall be read and construed accordingly.

IN WITNESS WHEREOF the Employer and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives the day and year first above written.

Signed by for and on behalf of the Employer

[Signature]

[Title]

in the presence of _____

Signed by for and on behalf of the Contractor

[Signature]

[Title]

in the presence of _____

CONTRACT AGREEMENT

dated the _____ day of _____, 20 _____

BETWEEN

[“the Employer”]

and

[“the Contractor”]

APPENDICES

Appendix 1	Terms and Procedures of Payment
Appendix 2	Price Adjustment
Appendix 3	Insurance Requirements
Appendix 4	Time Schedule
Appendix 5	List of Approved Subcontractors
Appendix 6	Scope of Works and Supply by the Employer
Appendix 7	List of Documents for Approval or Review
Appendix 8	Functional Guarantees

TERMS AND PROCEDURES OF PAYMENT

In accordance with the provisions of GCC Clause 12 (Terms of Payment), the Employer shall pay the Contractor in the following manner and at the following times, on the basis of the Price Break down given in the Section on Price Schedules. Payments will be made in the currencies quoted by the Bidder unless otherwise agreed between the parties. However, applicable taxes, duties and levies shall be reimbursed/paid in local currency. Application for payment in respect of part deliveries may be made by the Contractor as work proceeds.

TERMS OF PAYMENT

A. Schedule No.1: Plant and Equipment (excluding Mandatory Spares and Type Tests) quoted on CIF (Indian-port-of-entry) basis

In respect of Plant and Equipment (excluding mandatory spares) supplied from abroad, the following payments shall be made:-

A1. For FOB Price Component of Plant and Equipment (excluding Mandatory Spares and Type Tests):

(I) (a) **Seven and a Half percent (7.5%)** of the Total FOB Supply Price Component of Contract Price as Initial Advance payment shall be paid as follows:

- (i) Acceptance of Notification of Award and Signing of the Contract Agreement.
- (ii) Submission of an unconditional Bank Guarantee covering the advance amount which shall be initially kept valid upto (ninety) 90 days beyond the schedule date of Completion of the Facilities under the Package. However, in case of delay in completion of facilities, the validity of this Bank Guarantee shall be extended by the period of such delay. Proforma of Bank Guarantee is enclosed in Section - VII - Bank Guarantee Form for Advance Payment.
- (iii) Submission by the Main Contractor of an unconditional Bank Guarantee(s) towards Performance Security(s) in respect of all Contracts (including the Contracts entered into with the Contractor's Assignee, if applicable in case of foreign contractor) and submission by the Assignee (if applicable in case of Foreign Contractor) of an unconditional Bank Guarantee(s) towards Performance Security(s) in respect of all Contracts entered into with the Assignee, all initially valid upto ninety (90) days after the end of Defects Liability Period of all equipment covered under the Contract. The proforma of Bank Guarantee is enclosed in Section-VII-Form of Performance Security.
- (iv) Submission of an unconditional Bank Guarantee towards Performance Security for Phased Manufacturing Program (PMP) for Steam Generator Sets and Steam Turbine Generator Sets, which shall be initially kept valid upto 90 days beyond the Schedule date of completion of PMP. However in case of delay in Completion of above, the validity of this Bank Guarantee shall be extended by the period of such delay. Proforma of BG is enclosed in Section-VII-Form of Performance Security regarding Phased Manufacturing Program.
- (v) Submission of unconditional Bank Guarantee(s) from all executants

of Deed(s) of Joint Undertaking other than Contractor towards faithful performance of the Deed(s) of Joint Undertaking for amount(s) and validity specified in the respective Deed(s) of Joint Undertaking enclosed in Section-VII of Bidding Documents. The proforma of Bank Guarantee(s) shall be as enclosed in Section - VII.

- (vi) Submission of a detailed PERT Network based on the Work Schedule stipulated in Appendix - 4 to Form of Contract Agreement and its approval by the Employer.

(I)(b) Seven and a Half percent (7.5%) of Total FOB Supply Price Component of Contract Price as Interim Advance Payment on:

- (i) Fulfilment of conditions mentioned at A1 (I)(a)(i) to (vi) above.
- (ii) Submission of an unconditional Bank Guarantee covering the advance amount, which shall be initially kept valid upto (ninety) 90 days beyond the schedule date for successful Completion of the Facilities under the Package. However, in case of delay in completion of facilities, the validity of this Bank Guarantee shall be extended by the period of such delay. Proforma of Bank Guarantee is enclosed in Section-VII - Bank Guarantee Form for Advance Payment.

- (iii) Completion of following:

Submission of copy of purchase order placed by Contractor and duly accepted by Sub-Contractor(s) for Turbine casting and forgings	2.5%
Submission of copy of work order placed by Contractor and duly accepted by Sub-Contractor(s) for Main plant civil agency (Boiler foundation and Main power House foundation work)	2.0%
Submission of copy of work order/ purchase order placed by Contractor and duly accepted by Sub-Contractor(s) for IDCT	2.0%
Submission of copy of purchase order placed by Contractor and duly accepted by Sub-Contractor(s) for stacker reclaimer	1.0%

Note :

- i. The interim advance amount shall be paid as specified for subsystems mentioned at (I) (b) (iii) above and the amount shall be released progressively on completion by Contractor.
- ii. However, if contractor fails to complete the despatches for Unit 1 along with the common facilities and Unit 2 till the date of unit wise completion of supplies as per agreed schedule, then the advance paid for such delayed supplies shall become interest bearing.

The applicable interest shall be calculated at the rate specified in the bidding documents on the advance amount (i.e. 15% of FOB/Ex-works (Main Equipment) supply component) of the balance despatches beyond such agreed schedule date of unit wise completion of supplies, for the period of delay between its actual despatch and the agreed

schedule date of unit wise completion of supplies correspondingly and the same shall be deducted from the due payments to the contractor.

- iii. In case the Contractor decides not to take advance payment mentioned at (I) above, 90% of the advance amount shall be paid progressively on pro- rata basis along with the receipt payment, as specified in para (III) below.

- (II) **Fifty Five Percent (55%)** of Total FOB Supply Price Component of the Contract Price for each identified equipment upon despatch of equipment from manufacturer's works on pro-rata basis on production of invoices and satisfactory evidence of shipment (which shall be original Bill of Lading) including Material Despatch Clearance Certificate (MDCC) issued by the Employer's Corporate QA & I representative.
- (III) **Twenty Percent (20%)** of Total FOB Supply Price Component of the Contract Price for each identified equipment on receipt of equipment at site on pro rata basis and physical verification and certification by the Project Manager for the equipment received and stored at site and on furnishing the confirmation from the contractor that all the payments due w.r.t. the Bought out Items are paid to their Sub-vendor(s) as per the agreed payment terms between Contractor and their sub-vendor.

Note: In case of non-payment/ delayed payment to sub-vendors for bought out items, NTPC/Employer reserves the right to pay to sub-vendors for bought out items directly, on account of the Contractor.

- (IV) **Deleted**

- (V) **Deleted**

- (VI) (a-i) **Two Percent (2%)** of FOB Supply Price Component of the contract price on Successful Completion of Trial/Initial Operation including all associated auxiliaries and ancillary works for Unit-I and certification by the Project Manager.

- (VI) (a-ii) **Two Percent (2%)** of FOB Supply Price Component of the contract price on Successful Completion of applicable Performance Guarantee Tests for Unit-I, to be conducted along with Trial/Initial operation as specified in Technical Specifications and issuance of Completion Certificate for Unit-I by the Project Manager.

Further, in case the contractor has successfully completed Trial / Initial Operation for all the systems along with PG Test for SG and STG and is not able to successfully conduct PG test of Auxiliary systems/ BOP systems, then 1.5% of FOB Supply Price Component of the contract price shall be released to the contractor without submission of any BG. Balance 0.5% shall be released after successful conductance of PG test of all the systems as per Technical Specifications.

However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the

contractor without submission of any BG.

Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (VI) (a-iii) **One Percent (1%)** of FOB Supply Price Component of the contract price on successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications for Unit-I and issue of Operational Acceptance Certificate for Unit-I.

However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (VI) (b-i) **Two Percent (2%)** of FOB Supply Price Component of the contract price on Successful Completion of Trial/Initial Operation including all associated auxiliaries and ancillary works for Unit-II and certification by the Project Manager.

- (VI) (b-ii) **Two Percent (2%)** of FOB Supply Price Component of the contract price on Successful Completion of applicable Performance Guarantee Tests for Unit-II, to be conducted along with Trial/Initial operation as specified in Technical Specifications and issuance of Completion Certificate for Unit-II by the Project Manager.

Further, in case the contractor has successfully completed Trial / Initial Operation for all the systems along with PG Test for SG and STG and is not able to successfully conduct PG test of Auxiliary systems/ BOP systems, then 1.5% of FOB Supply Price Component of the contract price shall be released to the contractor without submission of any BG. Balance 0.5% shall be released after successful conductance of PG test of all the systems as per Technical Specifications.

However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the contractor without submission of any BG.

Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (VI) (b-iii) **One Percent (1%)** of FOB Supply Price Component of the contract price on successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications for Unit-II and issue of Operational Acceptance Certificate for Unit-II.

However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- Notes: (1) Full Load is achieving full rated load generation on designated fuel as per the definition of Commissioning, for the purpose of capacity addition.**
- (2) The Initial Operation of the complete Facilities as an integral unit shall be conducted as per clause 26.02.00 of Part-C (GTR), Section-VI (Technical Specifications).**
- (3) The basis for the pro-rata payments at S. No. (II) & (III) above shall be the Billing Break-up (BBU) to be finalised subsequently after award of Contract.**

The Billing Break Up shall be generally on item rate basis. However, for the items which are generally supplied and billed on weight (tonnage) basis, the Billing Break-Up may be considered on weight (tonnage) basis.

- (4)** In case Installation Price (excluding Civil/Structural works price) is less than 15 % of the cumulative total of FOB & Ex-works Price of Main Equipment, the amount by which it is lower shall be retained proportionately from the FOB & Ex-works component of Contract price while releasing payments due on receipt of equipment, and no interest shall be payable on the retained amount. The aforesaid retained amount shall be paid on pro-rata basis upon completion of installation of the respective equipment and its certification by the Project Manager.

(If Prices are quoted in foreign currency then SBI Bills Selling exchange rate as on the date set for submission of Price bids shall be considered for the purpose of computing installation percentage /retention amount).

- (5)** In case the Civil Works Price (including Site Fabricated Structural works price) is less than 20 % of the cumulative total of FOB & Ex-works Price of Main Equipment, the amount by which it is lower shall be retained proportionately from the FOB & Ex-Works component of Contract price while releasing payments due on dispatch of equipment, and no interest shall be payable on the retained amount. The aforesaid retained amount shall be paid on pro-rata basis upon completion of Civil Works including Structural works (if any) corresponding to the respective equipment and its certification by the Project Manager.

(If Prices are quoted in foreign currency then SBI Bills Selling exchange rate as on the date set for submission of Price bids shall be considered for the purpose of computing Civil Works percentage /retention amount).

A2. Ocean Freight and Marine Insurance Charges (excluding Mandatory Spares parts) for Plant and Equipments covered in Sl. No. A1 above:

Hundred Percent (100%) of Ocean Freight and Marine Insurance Charges for plant & equipments (excluding Mandatory Spares) covered in Schedule-1 shall be paid upon shipment on pro-rata basis to the FOB price of the plant and equipments shipped. The aggregate of all such pro-rata payments shall not exceed the total amount identified in the Contract. However, where equipment wise Ocean Freight and Marine Insurance Charges have been identified in the Contract, the payment of Ocean Freight and Marine Insurance Charges shall be based on such charges identified in the Contract against shipment of equipments.

B. Schedule No. 2 : Plant and Equipments (excluding Mandatory Spares and Type Tests) quoted on Ex-works (India) basis

In respect of Plant and Equipments (excluding Mandatory Spares) which are manufactured within the Employer's country, the following payment shall be made :

B1. Ex-works Price Component of Plant and Equipments (excluding Mandatory Spares and Type Tests) :

(I) (a) **Seven and a Half percent (7.5%)** of the Total Ex-Works Supply Price Component of Contract Price as Initial Advance payment shall be paid as follows:

- (i) Acceptance of Notification of Award and Signing of the Contract Agreement.
- (ii) Submission of an unconditional Bank Guarantee covering the advance amount plus GST as applicable on the advance payment to be paid to the contractor which shall be initially kept valid upto (ninety) 90 days beyond the schedule date of Completion of the Facilities under the Package. However, in case of delay in completion of facilities, the validity of this Bank Guarantee shall be extended by the period of such delay. Proforma of Bank Guarantee is enclosed in Section - VII - Bank Guarantee Form for Advance Payment.
- (iii) Submission by the Main Contractor of an unconditional Bank Guarantee(s) towards Performance Security(s) in respect of all Contracts (including the Contracts entered into with the Contractor's Assignee, if applicable in case of foreign contractor) and submission by the Assignee (if applicable in case of Foreign Contractor) of an unconditional Bank Guarantee(s) towards Performance Security(s) in respect of all Contracts entered into with the Assignee, all initially valid upto ninety (90) days after the end of Defects Liability Period of all equipments covered under the Contract. The proforma of Bank Guarantee is enclosed in Section-VII-Form of Performance Security.
- (iv) Submission of an unconditional Bank Guarantee towards Performance Security for Phased Manufacturing Program (PMP) for

Steam Generator Sets and Steam Turbine Generator Sets, which shall be initially kept valid upto 90 days beyond the Schedule date of completion of PMP. However in case of delay in Completion of above, the validity of this Bank Guarantee shall be extended by the period of such delay. Proforma of BG is enclosed in Section-VII-Form of Performance Security regarding Phased Manufacturing Program.

- (v) Submission of unconditional Bank Guarantee(s) from all executants of Deed(s) of Joint Undertaking other than Contractor towards faithful performance of the Deed(s) of Joint Undertaking for amount(s) and validity specified in the respective Deed(s) of Joint Undertaking enclosed in Section-VII of Bidding Documents. The proforma of Bank Guarantee(s) shall be as enclosed in Section - VII.
- (vi) Submission of a detailed PERT Network based on the Work Schedule stipulated in Appendix - 4 to Form of Contract Agreement and its approval by the Employer.

(I) (b) Seven and a Half percent (7.5%) of Total Ex-Works Supply Price Component of Contract Price as Interim Advance Payment on:

- (i) Fulfilment of conditions mentioned at B1 (I)(a)(i) to (vi) above.
- (ii) Submission of an unconditional Bank Guarantee covering the advance amount, which shall be initially kept valid upto (ninety) 90 days beyond the schedule date for successful Completion of the Facilities under the Package. However, in case of delay in completion of facilities, the validity of this Bank Guarantee shall be extended by the period of such delay. Proforma of Bank Guarantee is enclosed in Section-VII - Bank Guarantee Form for Advance Payment.
- (iii) Completion of following:

Submission of copy of purchase order placed by Contractor and duly accepted by Sub-Contractor(s) for Turbine casting and forgings	2.5%
Submission of copy of work order placed by Contractor and duly accepted by Sub-Contractor(s) for Main plant civil agency (Boiler foundation and Main power House foundation work)	2.0%
Submission of copy of work order/ purchase order placed by Contractor and duly accepted by Sub-Contractor(s) for IDCT	2.0%
Submission of copy of purchase order placed by Contractor and duly accepted by Sub-Contractor(s) for stacker reclaimer	1.0%

Note :

- i. The interim advance amount shall be paid as specified for subsystems mentioned at (I) (b) (iii) above and the amount shall be released progressively on completion by Contractor.
- ii. However, if contractor fails to complete the despatches for Unit 1 along with the common facilities and Unit 2 till the date of unit wise

completion of supplies as per agreed schedule, then the advance paid for such delayed supplies shall become interest bearing.

The applicable interest shall be calculated at the rate specified in the bidding documents on the advance amount (i.e. 15% of FOB/Ex-works (Main Equipment) supply component) of the balance despatches beyond such agreed schedule date of unit wise completion of supplies, for the period of delay between its actual despatch and the agreed schedule date of unit wise completion of supplies correspondingly and the same shall be deducted from the due payments to the contractor.

- iii. In case the Contractor decides not to take advance payment mentioned at (I) above, 90% of the advance amount shall be paid progressively on pro- rata basis along with the receipt payment, as specified in para (III) below.

- (II) **Fifty Five Percent (55%)** of Total Ex-Works Supply Price Component of the Contract Price for each identified equipment upon despatch of equipment from manufacturer's works on pro-rata basis on production of invoices and satisfactory evidence of shipment (which shall be original Goods Receipt or receipted GR/Rail receipt) including Material Despatch Clearance Certificate (MDCC) issued by the Employer's Corporate QA & I representative.
- (III) **Twenty Percent (20%)** of Total Ex-Works Supply Price Component of the Contract Price for each identified equipment on receipt of equipment at site on pro rata basis and physical verification and certification by the Project Manager for the equipment received and stored at site and on furnishing the confirmation from the contractor that all the payments due w.r.t. the Bought out Items are paid to their Sub-vendor(s) as per the agreed payment terms between Contractor and their sub-vendor.

Note: In case of non-payment/ delayed payment to sub-vendors for bought out items, NTPC/Employer reserves the right to pay to sub-vendors for bought out items directly, on account of the Contractor.

- (IV) **Deleted**

- (V) **-Deleted-**

- (VI) (a-i) **Two Percent (2%)** of Ex-Works Supply Price Component of the contract price on Successful Completion of Trial/Initial Operation including all associated auxiliaries and ancillary works for Unit-I and certification by the Project Manager.

- (VI) (a-ii) **Two Percent (2%)** of Ex-Works Supply Price Component of the contract price on Successful Completion of applicable Performance Guarantee Tests for Unit-I, to be conducted along with Trial/Initial operation as specified in Technical Specifications and issuance of Completion Certificate for Unit-I by the Project Manager.

Further, in case the contractor has successfully completed Trial / Initial

Operation for all the systems along with PG Test for SG and STG and is not able to successfully conduct PG test of Auxiliary systems/ BOP systems, then 1.5% of Ex-Works Supply Price Component of the contract price shall be released to the contractor without submission of any BG. Balance 0.5% shall be released after successful conductance of PG test of all the systems as per Technical Specifications.

However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the contractor without submission of any BG.

Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (VI) (a-iii) **One Percent (1%)** of Ex-Works Supply Price Component of the contract price on successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications and issue of Operational Acceptance Certificate for Unit-I.

However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (VI) (b-i) **Two Percent (2%)** of Ex-Works Supply Price Component of the contract price on Successful Completion of Trial/Initial Operation including all associated auxiliaries and ancillary works for Unit-II and certification by the Project Manager.

- (VI) (b-ii) **Two Percent (2%)** of Ex-Works Supply Price Component of the contract price on Successful Completion of applicable Performance Guarantee Tests for Unit-II, to be conducted along with Trial/Initial operation as specified in Technical Specifications and issuance of Completion Certificate for Unit-II by the Project Manager.

Further, in case the contractor has successfully completed Trial / Initial Operation for all the systems along with PG Test for SG and STG and is not able to successfully conduct PG test of Auxiliary systems/ BOP systems, then 1.5% of Ex-Works Supply Price Component of the contract price shall be released to the contractor without submission of any BG. Balance 0.5% shall be released after successful conductance of PG test of all the systems as per Technical Specifications.

However, if for reasons attributable to the Employer, the performance

Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the contractor without submission of any BG.

Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (VI) (b-iii) **One Percent (1%)** of Ex-Works Supply Price Component of the contract price on successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications and issue of Operational Acceptance Certificate for Unit-II.

However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- Notes:**
- (1) Full Load is achieving full rated load generation on designated fuel as per the definition of Commissioning, for the purpose of capacity addition.**
 - (2) The Initial Operation of the complete Facilities as an integral unit shall be conducted as per clause 26.02.00 of Part-C (GTR), Section-VI (Technical Specifications).**
 - (3) The basis for the pro-rata payments at S. No. (II) & (III) above shall be the Billing Break-up (BBU) to be finalised subsequently after award of Contract.**

The Billing Break Up shall be generally on item rate basis. However, for the items which are generally supplied and billed on weight (tonnage) basis, the Billing Break-Up may be considered on weight (tonnage) basis.

- (4) In case Installation Price (excluding Civil/Structural works price) is less than 15 % of the cumulative total of FOB & Ex-works Price of Main Equipment, the amount by which it is lower shall be retained proportionately from the FOB & Ex-works component of Contract price while releasing payments due on receipt of equipment, and no interest shall be payable on the retained amount. The aforesaid retained amount shall be paid on pro-rata basis upon completion of installation of the respective equipment and its certification by the Project Manager.**

(If Prices are quoted in foreign currency then SBI Bills Selling exchange rate as on the date set for submission of Price bids shall be considered for the purpose of computing installation percentage

/retention amount).

- (5) In case the Civil Works Price (including Site Fabricated Structural works price) is less than 20 % of the cumulative total of FOB & Ex-works Price of Main Equipment, the amount by which it is lower shall be retained proportionately from the FOB & Ex-Works component of Contract price while releasing payments due on dispatch of equipment, and no interest shall be payable on the retained amount. The aforesaid retained amount shall be paid on pro-rata basis upon completion of Civil Works including Structural works (if any) corresponding to the respective equipment and its certification by the Project Manager.

(If Prices are quoted in foreign currency then SBI Bills Selling exchange rate as on the date set for submission of Price bids shall be considered for the purpose of computing Civil Works percentage /retention amount).

C. **Schedule 1, Schedule 2 and Schedule 6: Payment Terms for Mandatory Spares and Recommended Spares (When ordered) quoted on CIF (Indian-Port-of-Entry) / Ex-Works (India) basis :**

The CIF (Indian port-of-entry) price of spares to be supplied from abroad and Ex-works (India) price of spares manufactured within the Employer's country shall be paid as under:

- (i) **Seventy five percent (75%)** of CIF/Ex-works price component of the spares to be paid on pro-rata basis: upon despatch to site and against invoices and shipping documents along with Material Despatch Clearance Certificate (MDCC) issued by the Employer's QA&I representative
- (ii) **Twenty five percent (25%)** of CIF/Ex-works price component of the spares to be paid on pro-rata basis: on receipt and storage at site and on physical verification & certification by the Project Manager for the spares received and stored at site.

D. **Schedule No. 3: Local Transportation**

- a) **All Plant and Equipment including mandatory spares and recommended spares (if ordered)**

Hundred Percent (100%) of Local Transportation charges (including port clearance, port handling and port charges etc., if applicable, and inland transit insurance charges) for the plant and equipment including mandatory spares and also recommended spares (if ordered) shall be paid to the Contractor pro-rata to the value of the equipment/spares received at site and on production of invoices by the Contractor. The aggregate of all such pro-rata payments shall, however, not exceed the total amount identified in the Contract for Local Transportation. However, where item wise local transportation charges (including port clearance, port handling and port charges etc., if applicable, and inland transit insurance charges) have been identified in the Contract, the payment for the same shall be made after receipt of the equipment/spares at site, based on the charges so identified in the Contract.

E. **Schedule No. 4 : Installation Services excluding Civil and Site Fabricated**

Structural Works Portion

The Foreign Currency Portion as well as Local Currency Portion of the Total Installation Services Component of the Contract Price of Plant and Equipment (excluding Civil and Site Fabricated Structural Works Portion) shall be paid as under :

(IA) Five Percent (5%) of the total Installation Services component of the Contract Price (excluding Civil and Site Fabricated Structural Works Portion) will be paid to the Contractor as interest bearing initial advance payment on:

- (i) Acceptance of Notification of Award and Signing of Contract Agreement.
- (ii) Establishing their office at site preparatory to mobilisation of their erection establishment.
- (iii) Submission of an unconditional Bank Guarantee for an amount equivalent to one hundred ten percent (110%) of the advance amount plus GST as applicable on the advance payment to be paid to the contractor, which shall be initially kept valid upto ninety (90) days beyond the schedule date for Completion of the last Facility covered under the Package. However, in case of delay in completion of the facilities covered under the package, the validity of this advance Bank Guarantee shall be extended by the period of such delay. The proforma of the Bank Guarantee is enclosed in Section-VII-Bank Guarantee Form for Advance Payment.
- (iv) Submission by the Main Contractor of an unconditional Bank Guarantee(s) towards Performance Security(s) in respect of all Contracts (including the Contracts entered into with the Contractor's Assignee, if applicable in case of foreign contractor) and submission by the Assignee (if applicable in case of Foreign Contractor) of an unconditional Bank Guarantee(s) towards Performance Security(s) in respect of all Contracts entered into with the Assignee, all initially valid upto ninety (90) days after the end of Defects Liability Period of all equipments covered under the Contract. The proforma of Bank Guarantee is enclosed in Section-VII-Form of Performance Security.
- (v) Submission of an unconditional Bank Guarantee towards Performance Security for Phased Manufacturing Program (PMP) for Steam Generator Sets and Steam Turbine Generator Sets, which shall be initially kept valid upto 90 days beyond the Schedule date of completion of PMP. However in case of delay in Completion of above, the validity of this Bank Guarantee shall be extended by the period of such delay. Proforma of BG is enclosed in Section-VII-Form of Performance Security regarding Phased Manufacturing Program.
- (vi) Submission of unconditional Bank Guarantee(s) from all executants of Deed(s) of Joint Undertaking other than Contractor towards faithful performance of the Deed(s) of Joint Undertaking for amount(s) and validity specified in the respective Deed(s) of Joint Undertaking enclosed in Section-VII of Bidding Documents. The proforma of Bank Guarantee(s) shall be as enclosed in Section - VII.

- (vii) Submission of a detailed PERT Network based on the work schedule stipulated in Appendix - 4 to the Form of Contract Agreement and its approval by the Employer.
- (viii) Advance Payment for Installation services price components shall be released after certification of Engineer-in-Charge that the Contractor has brought to site the Safety equipments & Safety Personal Protective Equipments as per minimum quantity specified in the Bidding Documents.

In case the Contractor decides not to take advance payment, the first progressive payment for Installation services price component shall be released after certification of Engineer-in-Charge that the Contractor has brought to site the Safety equipments & Safety Personal Protective Equipments as per minimum quantity specified in the Bidding Documents.

(IB) Further, Five Percent (5%) of the total installation services component of the Contract Price (excluding Civil Works and structural works Portion) will be paid to the Contractor as interest bearing initial advance payment on :

- (i) Fulfillment of Conditions mentioned at E(IA)(i) to (viii) above
- (ii) Submission of an unconditional Bank Guarantee for an amount equivalent to one hundred ten percent (110%) of the advance amount plus GST as applicable on the advance payment to be paid to the contractor, which shall be initially kept valid upto ninety (90) days beyond the schedule date for Completion of the last Facility covered under the Package. However, in case of delay in completion of the facilities covered under the package, the validity of this advance Bank Guarantee shall be extended by the period of such delay. The proforma of the Bank Guarantee is enclosed in Section-VII-Bank Guarantee Form for Advance Payment.
- (iii) Finalisation of Installation/Erection Agency and Submission of copy of purchase order/contract placed by Contractor and duly accepted by Installation/Erection Agency and T&P & manpower mobilization as identified alongwith PERT Network for start of erection and certification thereof by the Engineer-in-Charge.

- (IC) The recovery of the interest component on the advance amount shall be made from the progressive payments released to the Contractor as per Clause E(II) of APPENDIX-I to Form of Contract Agreement, Section-VII. The amount of interest to be recovered from a particular bill shall be **“SBI 1-year MCLR as on 01st April of applicable year + 150 bps” per annum** on the value advance corresponding to the %age of total progressive payment being released. The period for which the interest is to be calculated shall be reckoned from the date of release of the advance payment to the actual date of release of the said progressive payment or the expiry of the stipulated time frame for release of such progressive payments under the contract, whichever is earlier. The interest on the advance payment shall stand fully recovered on release of all the progressive payments. If the amount payable under any interim bill is not sufficient to cover all deductions to be made for interest on the advance payment and other sums deductible therefrom, the balance outstanding shall be recovered from the next payments immediately

falling due.

Note: In case the contractor decides not to take interest bearing advance payment, the advance payment shall be proportionately adjusted in the progressive payment of 80%.

- (II) **Eighty Percent (80%)** of the Installation Services component of Contract Price (excluding Civil and Site Fabricated Structural works) shall be paid on pro-rata basis against progressive erection of the identified equipment on certification by the Project Manager for the quantum of work completed and on certification by the Project Manager's field quality assurance & surveillance representative for the successful completion of quality check points involved in the quantum of work.

Note: The release of first progressive payment for installation services shall be on completion of pre-installation activities i.e. readiness of Priority 1 Roads and first phase development of Storage and laydown area (i.e. 50000 sqmtr. hard crusting with roads and drains for storage of steel, foundation materials, readiness of 2 storage sheds, readiness of store office with material management group at site) and subject to submission of documentary evidence by the Contractor towards having taken the insurance policy(ies.) in terms of relevant provisions of GCC Clause 34 (Insurance) and acceptance of same by the Project Manager.

(III) -Deleted-

(IV) -Deleted-

- (V) (a-i) **Two Percent (2%)** of total Installation Services Component of Contract Price (excluding Civil and Site Fabricated Structural Works) on Successful Completion of Trial/Initial Operation including all associated auxiliaries and ancillary works for Unit-I and certification by the Project Manager.

- (V) (a-ii) **Two Percent (2%)** of total Installation Services Component of Contract Price (excluding Civil and Site Fabricated Structural Works) on Successful Completion of applicable Performance Guarantee Tests for Unit-I, to be conducted along with Trial/Initial operation as specified in Technical Specifications and issuance of Completion Certificate for Unit-I by the Project Manager.

Further, in case the contractor has successfully completed Trial / Initial Operation for all the systems along with PG Test for SG and STG and is not able to successfully conduct PG test of Auxiliary systems/ BOP systems, then 1.5% of aforesaid total Installation Services Component of the contract price shall be released to the contractor without submission of any BG. Balance 0.5% shall be released after successful conductance of PG test of all the systems as per Technical Specifications.

However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the contractor without submission of any BG.

Further, if for reasons attributable to the Employer, in case the

performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (V) (a-iii) **One Percent (1%)** of total Installation Services Component of Contract Price (excluding Civil and Site Fabricated Structural Works) on Successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications and issue of Operational Acceptance Certificate for Unit-I.

However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (V) (b-i) **Two Percent (2%)** of total Installation Services Component of Contract Price (excluding Civil and Site Fabricated Structural Works) on Successful Completion of Trial/Initial Operation including all associated auxiliaries and ancillary works for Unit-II and certification by the Project Manager.

- (V) (b-ii) **Two Percent (2%)** of total Installation Services Component of Contract Price (excluding Civil and Site Fabricated Structural Works) on Successful Completion of applicable Performance Guarantee Tests for Unit-II, to be conducted along with Trial/Initial operation as specified in Technical Specifications and issuance of Completion Certificate for Unit-II by the Project Manager.

Further, in case the contractor has successfully completed Trial / Initial Operation for all the systems along with PG Test for SG and STG and is not able to successfully conduct PG test of Auxiliary systems/ BOP systems, then 1.5% of aforesaid total Installation Services Component of the contract price shall be released to the contractor without submission of any BG. Balance 0.5% shall be released after successful conductance of PG test of all the systems as per Technical Specifications.

However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the contractor without submission of any BG.

Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (V) (b-iii) **One Percent (1%)** of total Installation Services Component of Contract Price (excluding Civil and Site Fabricated Structural Works) on Successful

completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications and issue of Operational Acceptance Certificate for Unit-II.

However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

Note: (1) -Deleted-

- (2) The Initial Operation of the complete Facilities as an integral unit shall be conducted as per clause 26.02.00 of Part-C (GTR), Section-VI (Technical Specifications).**
- (3) In case, Installation Services component of Contract Price includes foreign currencies, the payment at each stage as above, shall be made in the stated currencies on proportionate basis for the items of work involving foreign currency.**

The basis for the pro-rata payments at Sl. No. (II) above shall be the Billing Break up to be finalised subsequently.

- (4) In case the Installation Price (excluding Civil/Structural works price) is more than 25% of the cumulative total of FOB & Ex-works Price of Main Equipment, the amount by which it is higher shall be retained while releasing progressive payments due on installation of equipment, and no interest shall be payable on the retained amount. The aforesaid retained amount shall be paid along with payment due on completion of Trial Operation / Completion of Facilities.**

(If Prices are quoted in foreign currency then SBI Bills Selling exchange rate as on the date set for submission of bids shall be considered for the purpose of computing installation percentage /retention amount).

F. Schedule No. 4 : Civil Works

The Civil Works Price Component of the Contract Price shall be paid as under :

(I)(a) Five (5%) of the total Civil Works Price component of the Contract Price will be paid to the Contractor as interest bearing advance payment on:

- (i) Acceptance of Notification of Award and Signing of Contract Agreement.**
- (ii) Establishment of their office at site in preparatory to commencement of Civil Works.**
- (iii) Submission of an unconditional Bank Guarantee for an amount equivalent to one hundred ten percent (110%) of the advance amount plus GST as applicable on the advance payment to be paid to the contractor, which shall be initially kept valid upto ninety (90) days beyond the schedule date**

for Completion of the last Facility covered under the Package. However, in case of delay in completion of the facilities covered under the package, the validity of this advance Bank Guarantee shall be extended by the period of such delay. The proforma of the Bank Guarantee is enclosed in Section-VII-Bank Guarantee Form for Advance Payment.

- (iv) Submission by the Main Contractor of an unconditional Bank Guarantee(s) towards Performance Security(s) in respect of all Contracts (including the Contracts entered into with the Contractor's Assignee, if applicable in case of foreign contractor) and submission by the Assignee (if applicable in case of Foreign Contractor) of an unconditional Bank Guarantee(s) towards Performance Security(s) in respect of all Contracts entered into with the Assignee, all initially valid upto ninety (90) days after the end of Defects Liability Period of all equipments covered under the Contract. The proforma of Bank Guarantee is enclosed in Section-VII-Form of Performance Security.
- (v) Submission of an unconditional Bank Guarantee towards Performance Security for Phased Manufacturing Program (PMP) for Steam Generator Sets and Steam Turbine Generator Sets, which shall be initially kept valid upto 90 days beyond the Schedule date of Completion of PMP. However in case of delay in Completion of above, the validity of this Bank Guarantee shall be extended by the period of such delay. Proforma of BG is enclosed in Section-VII-Form of Performance Security regarding Phased Manufacturing Program.
- (vi) Submission of unconditional Bank Guarantee(s) from all executants of Deed(s) of Joint Undertaking other than Contractor towards faithful performance of the Deed(s) of Joint Undertaking for amount(s) and validity specified in the respective Deed(s) of Joint Undertaking enclosed in Section-VII of Bidding Documents. The proforma of Bank Guarantee(s) shall be as enclosed in Section - VII.
- (vii) Submission of a detailed PERT Network based on the work schedule stipulated in Appendix-4 to Form of the Contract Agreement and its approval by the Employer.
- (viii) Advance Payment for Civil works price components shall be released after certification of Engineer-in-Charge that the Contractor has brought to site the Safety equipments & Safety Personal Protective Equipments as per minimum quantity specified in the Bidding Documents.

In case the Contractor decides not to take advance payment, the first progressive payment for Civil works price component shall be released after certification of Engineer-in-Charge that the Contractor has brought to site the Safety equipments & Safety Personal Protective Equipments as per minimum quantity specified in the Bidding Documents.

- (l)(b) **Further, Five Percent (5%)** of the total Civil Works Price component of the Contract Price will be paid to the Contractor **as interest bearing advance** payment on:
 - (i) Fulfillment of conditions mentioned at F(l) (a)(i) to (viii) above
 - (ii) Submission of an unconditional Bank Guarantee for an amount equivalent to one hundred ten percent (110%) of the advance amount plus GST as

applicable on the advance payment to be paid to the contractor, which shall be initially kept valid upto ninety (90) days beyond the schedule date for Completion of the last Facility covered under the Package. However, in case of delay in completion of the facilities covered under the package, the validity of this advance Bank Guarantee shall be extended by the period of such delay. The proforma of the Bank Guarantee is enclosed in Section-VII-Bank Guarantee Form for Advance Payment.

- (iii) Finalisation of Civil Agency and submission of copy of purchase order/contract placed by Contractor and duly accepted by Civil Agency and T&P & manpower mobilization as identified alongwith PERT Network for start of Civil works and certification thereof by the Engineer-in-Charge.

- (I)(c) The recovery of the interest component on the above advance amount shall be made from the progressive payments released to the contractor as per clause F(II) of Appendix-1 to Form of Contract Agreement, Book 3 of 3, Section-VII. The amount of interest to be recovered from a particular bill shall be **“SBI 1-year MCLR as on 01st April of applicable year + 150 bps” per annum** on the value of advance corresponding to the %age of total progressive payment being released. The period for which the interest is to be calculated shall be reckoned from the date of release of the advance payment to the actual date of release of the said progressive payment or the expiry of the stipulated time frame for release of such progressive payments under the contract, whichever is earlier. The interest on the advance payment shall stand fully recovered on release of all the progressive payments. If the amount payable under any interim bill is not sufficient to cover all deductions to be made for interest on the advance payment and other sums deductible therefrom, the balance outstanding shall be recovered from the next payments immediately falling due.

Note: In case the contractor decides not to take interest bearing advance payment, the advance payment shall be proportionately adjusted in the Progressive payment of 80%.

- (II) **Eighty percent (80%)** of the total Civil Works Price Component of Contract Price shall be paid progressively on certification by the Project Manager for the quantum of work completed and by Project Manager's field quality surveillance representative for the successful completion of quality check points involved in the quantum of work billed.

Note : The release of first progressive payment for civil works shall be on completion of pre-Civil works activities i.e. establishment of Safety Control Room & Site office of DVC and establishment of workers habitat (as per spec) for 500 workers and subject to submission of documentary evidence by the Contractor towards having taken the insurance policy(ies) in terms of relevant provisions of GCC Clause 34 (Insurance) and acceptance of same by the Project Manager.

- (III) -Deleted-

- (IV) -Deleted-

- (V) (a-i) **Two Percent (2%)** of total Civil Works Price Component of Contract Price on Successful Completion of Trial/Initial Operation including all associated auxiliaries and ancillary works for Unit-I and certification by the Project Manager.

Two Percent (2%) of total Civil Works Price Component of Contract Price on Successful Completion of applicable Performance Guarantee Tests for Unit-I, to be conducted along with Trial/Initial operation as specified in Technical Specifications and issuance of Completion Certificate for Unit-I by the Project Manager.

Further, in case the contractor has successfully completed Trial / Initial Operation for all the systems along with PG Test for SG and STG and is not able to successfully conduct PG test of Auxiliary systems/ BOP systems, then 1.5% of total Civil Works Price Component of the contract price shall be released to the contractor without submission of any BG. Balance 0.5% shall be released after successful conductance of PG test of all the systems as per Technical Specifications.

However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the contractor without submission of any BG.

Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (V) (a-ii) **One Percent (1%)** of total Civil Works Price Component of Contract Price on Successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications and issue of Operational Acceptance Certificate for Unit-I.

However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (V) (b-i) **Two Percent (2%)** of total Civil Works Price Component of Contract Price on Successful Completion of Trial/Initial Operation including all associated auxiliaries and ancillary works for Unit-II and certification by the Project Manager.

- (V) (b-ii) **Two Percent (2%)** of total Civil Works Price Component of Contract Price on Successful Completion of applicable Performance Guarantee Tests for Unit-II, to be conducted along with Trial/Initial operation as specified in Technical Specifications and issuance of Completion Certificate for Unit-II by the Project Manager.

Further, in case the contractor has successfully completed Trial / Initial Operation for all the systems along with PG Test for SG and STG and is not able to successfully conduct PG test of Auxiliary systems/ BOP systems, then 1.5% of total Civil Works Price Component of the contract price shall be released to the contractor without submission of any BG. Balance 0.5% shall be released after successful conductance of PG test of all the systems as per Technical Specifications.

However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the contractor without submission of any BG.

Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (V) (b-iii) **One Percent (1%)** of total Civil Works Price Component of Contract Price on Successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications and issue of Operational Acceptance Certificate for Unit-II.

However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (VI) Secured advance against materials (Cement & Reinforcement Steel) shall be paid to the Contractor on the certificate of Project Manager. The contractor shall be paid material secured advance upto maximum limit of 75% (exact percent of material secured advance shall be decided by Project Manager based on total requirement of Cement and Reinforcement Steel for the complete work and total cost of Civil Construction works as provided in the Contract) of the cost of Cement & Reinforcement Steel which in the opinion of Project Manager is reasonably required in accordance with the Contract and the same has been brought to site for incorporation in the works and are safeguarded against loss due to any cause whatsoever and stored as per requirement of Technical specification.

Total amount of secured advances against material (i.e., Cement & Reinforcement Steel) payable as per the above provision however, shall not exceed 10% of the cost of total Civil Construction works for cement & 25% of the cost of total Civil Construction works for Reinforcement Steel.

- (VII) The material secured advance payment under clause (VI) above shall be fully

adjusted from the payments due to contractor for the works done against clause (II) above as and when materials are utilised in the same.

- (VIII) On completion of works as per requirement of specification, if any balance materials (i.e. Cement and Reinforcement Steel) are available in the contractor's store after full adjustment of material secured advance from the payments due under clause (II) above, contractor shall be allowed by the Employer to take out the balance material (Cement & Reinforcement Steel) from the plant.
- (IX) The Contractor store shall be opened, for supervision and verification by the Project Manager or his authorised representatives, at any time, in case he so desires.

Note: In case the Civil Works Price (including Site Fabricated Structural Works Price) is more than 30 % of the cumulative total of FOB & Ex-works Price of Main Equipment, the amount by which it is higher shall be retained while releasing progressive payments due on completion of civil works (including Site Fabricated Structural works), and no interest shall be payable on the retained amount. The aforesaid retained amount shall be paid along with payment due on completion of Trial Operation / Completion of Facilities.

(If Prices are quoted in foreign currency then SBI Bills Selling exchange rate as on the date set for submission of Price bids shall be considered for the purpose of computing Civil Works percentage /retention amount).

G. **Schedule No. 4 : Site Fabricated Structural Works**

The Site Fabricated Structural Works Price Component of the Contract Price shall be paid as under:

- (I)(a) **Five (5%)** of the total Site Fabricated Structural works Price component of the Contract Price will be paid to the Contractor **as interest bearing advance** payment on:
 - (i) Acceptance of Notification of Award and Signing of Contract Agreement.
 - (ii) Establishment of their office at site in preparatory to commencement of Site Fabricated Structural Works.
 - (iii) Submission of an unconditional Bank Guarantee for an amount equivalent to one hundred ten percent (110%) of the advance amount plus GST as applicable on the advance payment to be paid to the contractor, which shall be initially kept valid upto ninety (90) days beyond the schedule date for Completion of the last Facility covered under the Package. However, in case of delay in completion of the facilities covered under the package, the validity of this advance Bank Guarantee shall be extended by the period of such delay. The proforma of the Bank Guarantee is enclosed in Section-VII-Bank Guarantee Form for Advance Payment.
 - (iv) Submission by the Main Contractor of an unconditional Bank Guarantee(s) towards Performance Security(s) in respect of all Contracts (including the Contracts entered into with the Contractor's Assignee, if applicable in case of foreign contractor) and submission

by the Assignee (if applicable in case of Foreign Contractor) of an unconditional Bank Guarantee(s) towards Performance Security(s) in respect of all Contracts entered into with the Assignee, all initially valid upto ninety (90) days after the end of Defects Liability Period of all equipments covered under the Contract. The proforma of Bank Guarantee is enclosed in Section-VII-Form of Performance Security.

- (v) Submission of an unconditional Bank Guarantee towards Performance Security for Phased Manufacturing Program (PMP) for Steam Generator Sets and Steam Turbine Generator Sets, which shall be initially kept valid upto 90 days beyond the Schedule date of Completion of PMP. However in case of delay in Completion of above, the validity of this Bank Guarantee shall be extended by the period of such delay. Proforma of BG is enclosed in Section-VII-Form of Performance Security regarding Phased Manufacturing Program.
- (vi) Submission of unconditional Bank Guarantee(s) from all executants of Deed(s) of Joint Undertaking other than Contractor towards faithful performance of the Deed(s) of Joint Undertaking for amount(s) and validity specified in the respective Deed(s) of Joint Undertaking enclosed in Section-VII of Bidding Documents. The proforma of Bank Guarantee(s) shall be as enclosed in Section - VII.
- (vii) Submission of a detailed PERT Network based on the work schedule stipulated in Appendix-4 to Form of the Contract Agreement and its approval by the Employer.
- (viii) Advance Payment for Site Fabricated Structural works price components shall be released after certification of Engineer-in-Charge that the Contractor has brought to site the Safety equipment & Safety Personal Protective Equipment as per minimum quantity specified in the Bidding Documents.

In case the Contractor decides not to take advance payment, the first progressive payment for Site Fabricated Structural works price component shall be released after certification of Engineer-in-Charge that the Contractor has brought to site the Safety equipment & Safety Personal Protective Equipment as per minimum quantity specified in the Bidding Documents.

- (l)(b) **Further, Five Percent (5%)** of the total Site Fabricated Structural works Price component of the Contract Price will be paid to the Contractor **as interest bearing advance** payment on:

- (i) Fulfillment of conditions as mentioned at G(l)(a)(i) to (viii) above
- (ii) Submission of an unconditional Bank Guarantee for an amount equivalent to one hundred ten percent (110%) of the advance amount plus GST as applicable on the advance payment to be paid to the contractor, which shall be initially kept valid upto ninety (90) days beyond the schedule date for Completion of the last Facility covered under the Package. However, in case of delay in completion of the facilities covered under the package, the validity of this advance Bank Guarantee shall be extended by the period of such delay. The proforma of the Bank Guarantee is enclosed in Section-VII-Bank Guarantee Form for Advance Payment.

- (iii) Finalisation of Structural Works Agency and submission of copy of purchase order/contract placed by Contractor and duly accepted by Structural Works Agency and T&P & manpower mobilization as identified alongwith PERT Network for start of Site Fabricated Structural works and certification thereof by the Engineer-in-Charge.

- (l)(c) The recovery of the interest component on the above advance amount shall be made from the progressive payments released to the contractor as per clause G(II) to G(V) of Appendix-1, Form of Contract Agreement, Book 3 of 3, Section-VII. The amount of interest to be recovered from a particular bill shall be **“SBI 1-year MCLR as on 01st April of applicable year + 150 bps” per annum** on the value of advance corresponding to the %age of total progressive payment being released. The period for which the interest is to be calculated shall be reckoned from the date of release of the advance payment to the actual date of release of the said progressive payment or the expiry of the stipulated time frame for release of such progressive payments under the contract, whichever is earlier. The interest on the advance payment shall stand fully recovered on release of all the progressive payments. If the amount payable under any interim bill is not sufficient to cover all deductions to be made for interest on the advance payment and other sums deductible therefrom, the balance outstanding shall be recovered from the next payments immediately falling due.

Note: In case the contractor decides not to take interest bearing advance payment, the advance payment shall be proportionately adjusted in the balance payments excluding final payment (i.e. in Progressive Payments at G-II to G-V).

- (II) Eighty percent (80%) of the total Structural Works Price Component shall be paid progressively on (a) certification by the Project Manager for the quantum of work completed and (b) certification by the Project Manager's Field Quality Surveillance representative for the successful completion of quality check points involved in the quantum of work billed.

Note:

- (i) The release of first progressive payment for Site Fabricated Structural works shall also be subject to submission of documentary evidence by the Contractor towards having taken the insurance policy(ies) in terms of relevant provisions of GCC Clause 34 (Insurance) and acceptance of same by the Project Manager.
- (ii) Sequence of painting of structures as given in technical specifications shall be followed.
- (III) **Deleted**
- (IV) **Deleted**
- (V) **Deleted**
- (VI) (a-i) **Two Percent (2%)** of total Structural Works Price Component of Contract Price on Successful Completion of Trial/Initial Operation including all associated auxiliaries and ancillary works for Unit-I and certification by the Project Manager.

- (VI) (a-ii) **Two Percent (2%)** of total Structural Works Price Component of Contract Price on Successful Completion of applicable Performance Guarantee Tests for Unit-I, to be conducted along with Trial/Initial operation as specified in Technical Specifications and issuance of Completion Certificate for Unit-I by

the Project Manager.

Further, in case the contractor has successfully completed Trial / Initial Operation for all the systems along with PG Test for SG and STG and is not able to successfully conduct PG test of Auxiliary systems/ BOP systems, then 1.5% of total Structural Works Price Component of the contract price shall be released to the contractor without submission of any BG. Balance 0.5% shall be released after successful conductance of PG test of all the systems as per Technical Specifications.

However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the contractor without submission of any BG.

Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (VI) (a-ii) **One Percent (1%)** of total Structural Works Price Component of Contract Price on Successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications and issue of Operational Acceptance Certificate for Unit-I.

However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (VI) (b-i) **Two Percent (2%)** of total Structural Works Price Component of Contract Price on Successful Completion of Trial/Initial Operation including all associated auxiliaries and ancillary works for Unit-II and certification by the Project Manager.

- (VI) (b-ii) **Two Percent (2%)** of total Structural Works Price Component of Contract Price on Successful Completion of applicable Performance Guarantee Tests for Unit-II, to be conducted along with Trial/Initial operation as specified in Technical Specifications and issuance of Completion Certificate for Unit-II by the Project Manager.

Further, in case the contractor has successfully completed Trial / Initial Operation for all the systems along with PG Test for SG and STG and is not able to successfully conduct PG test of Auxiliary systems/ BOP systems, then 1.5% of total Structural Works Price Component of the contract price shall be released to the contractor without submission of any BG. Balance 0.5% shall

be released after successful conductance of PG test of all the systems as per Technical Specifications.

However, if for reasons attributable to the Employer, the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of 01 (one) month from the date of Completion of Trial Operation, then 50% of the amount due on "Completion of Trial / Initial Operation alongwith PG Test" shall be released to the contractor without submission of any BG.

Further, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof cannot be successfully completed within the period of one year from the date of Completion of Trial Operation, then pending 50% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

- (VI) (b-iii) **One Percent (1%)** of total Structural Works Price Component of Contract Price on Successful completion of applicable Performance Guarantee Tests to be conducted after Trial/Initial operations as specified in Technical Specifications and issue of Operational Acceptance Certificate for Unit-II.

However, if for reasons attributable to the Employer, in case the performance Guarantee (PG) Test of the Facilities or the relevant part thereof to be conducted after Trial/Initial operations cannot be successfully completed within the period of one year from the due date of completion of such PG test(s), then aforesaid 1% amount shall be released upon submission of Bank Guarantee of equivalent value. Such BG shall be released after successful conductance of PG test.

G1. Schedule No. 4: Amount linked to Safety Aspects/ compliance to Safety Rules

- I. The amount linked to Safety Aspects/ compliance to Safety Rules shall be paid in two parts, viz,**
- A) 10% amount (calculated as 0.1 Y of the service portion amount of RA bill) shall be linked to Fatal/Major Accidents, and
 - B) 90% amount (calculated as 0.9 Y of the service portion amount of RA bill) shall be linked to various Safety Aspects specified in Safety Rules of NTPC/Employer.

NOTE:

Amount linked to Safety Aspects/ Compliance to Safety Rules specified in Price Schedule

$$Y = \frac{\text{Total amount for Service Portion of the Contract, i.e. Civil + Installation/ Erection + Structural Works}}{\text{Total amount for Service Portion of the Contract, i.e. Civil + Installation/ Erection + Structural Works}} \times 100$$

- II.** While raising each RA Bill, Contractor shall claim Amount linked to Safety Aspects/ Compliance to Safety Rules in such a manner that amount claimed is equal to Y% of the service portion (Civil + Installation/ Erection + Structural Works) of RA Bill.

- III. The amount as elaborated at para G1. I. shall be withheld from first and second monthly RA bill of the respective quarter/three month period and shall be released in part or full based on safety compliance duly certified by Project Manager and Safety-in-charge on quarterly basis. The amount for the entire quarter (i.e. RA bills raised during a 3 month period) shall be paid to the Contractors at the end of that three months period along with 3rd/last RA Bill for the quarter/three months period upon complying the following conditions:

A) **Amount of RA Bill linked to Fatal/ Major Accidents (0.1Y as elaborated above at para G1.I.A)**

Aforesaid amount (on quarterly basis) shall be payable to Contractor only in case, there is

- i) No fatal injury or accident causing death in that three months period
and
- ii) No Major injury or accident causing 25% or more permanent disablement to workmen or employees in that three months period. Permanent disablement shall have the same meaning as indicated in The Workmen's Compensation Act' 1923.

In case of any fatal injury or accident as elaborated above occurs during that three month period, the stipulated amount (0.1Y) subject to minimum of **Rs 10 Lakh per fatality** shall be forfeited and shall not be payable to the Contractor under the contract. In case, the amount to be deducted/forfeited exceeds the amount linked to Fatal/ Major Accidents, the same shall be recovered from remaining Amount (0.9Y) linked to Compliance of Safety Rules and/or any other payments immediately due to the Contractor under the Contract.

In case of any Major injury or accident causing 25% or more permanent disablement to workmen or employees occurs during that three month period, **Rs 4 lakh per Major injury** shall be deducted from the amount (0.1Y) linked to Fatal/ Major Accidents and shall not be payable to the Contractor under the contract. In case, the amount to be deducted/forfeited exceeds the amount linked to Fatal/ Major Accidents, the same shall be recovered from remaining Amount (0.9Y) linked to Compliance of Safety Rules and/or any other payments immediately due to the Contractor under the Contract.

Further, in case, Contractor doesn't raise RA Bills in any three month period/quarter and if any fatal injury and/or major accident takes place in that period, Project Manager shall deduct the amount [Rs 10 Lakh per fatality and Rs 4 lakh per Major injury] pertaining to this particular quarter from his next RA bill/due payment. In case, the amount to be deducted/forfeited exceeds the amount linked to Safety, the same shall be recovered from any other payments immediately due to the Contractor under the Contract.

The amount deducted/forfeited as mentioned above shall be in addition to the compensation payable to the workmen / employees under the relevant provisions of the Workmen's Compensation Act' 1923 and rules framed there under or any other applicable laws as applicable from time to time.

B) **Amount of RA Bill linked to Compliance of Safety Rules (0.9Y i.e. 90% of amount as elaborated above at para G1.I.B)**

Aforesaid amount (on quarterly basis) shall be payable to Contractor in five equal parts under five heads as under:

(i) Amount payable on deployment of required Safety Personnel

One fifth of the amount specified at G1.III.B (calculated as 0.18Y of Service portion amount of RA Bill), on quarterly basis, shall be paid upon certification by Project Manager in consultation with Safety dept. that required number of Safety personnel as per Clause 2.3 of 'NTPC Safety Rules for Construction and Erection of Power Plants' [as enclosed with GCC/SCC] have been deployed. The aforesaid amount linked to deployment of requisite safety personnel shall be paid as under:

- a) 50% of the amount referred at G1.III.B.(i), for deployment of Safety Supervisors shall be paid on pro-rata basis depending upon the actual no. of Safety Supervisors deployed vis-à-vis actual requirement :

Amount to be paid = $0.09Y \times \text{Service portion of RA bill amount} \times \frac{a}{b}$

Where 'a' is actual no. of Safety supervisors deployed

and

'b' is required no. of Safety supervisors as per Safety Rules.

In case, actual no. of Safety supervisors deployed is more than requisite number (i.e. a/b is more than 1), the amount to be paid shall be restricted to 0.09Y.

- b) 50% of the amount referred at G1.III.B.(i), for deployment of Safety Officers shall be paid on pro-rata basis depending upon the actual no. of Safety Officers deployed vis-à-vis actual requirement :

Amount to be paid = $0.09Y \times \text{Service portion of RA bill amount} \times \frac{a}{b}$

Where 'a' is actual no. of Safety Officers deployed

and

'b' is required no. of Safety Officers as per Safety Rules.

In case, actual no. of Safety Officers deployed is more than requisite number (i.e. a/b is more than 1), the amount to be paid shall be restricted to 0.09Y.

- c) In case aforesaid requisite no. of Safety personnel are not deployed by Contractor, amount not to be paid as calculated above for that particular quarter/three month period shall be forfeited and shall not be payable to the Contractor under the contract.

(ii) Amount payable on providing requisite Personal Protective Equipment & Safety Equipment

One fifth of the amount specified at G1.III.B (calculated as 0.18Y of Service portion amount of RA Bill), on quarterly basis, shall be paid upon certification by Project Manager in consultation with Safety dept. that Contractor has adhered to the requirements of Clause 4 (Personal Protective Equipment) of 'NTPC Safety Rules for Construction and Erection of Power Plants' and the provisions of the Bidding Documents with regards to number of Safety Equipment/PPEs to be provided by the Contractor.

In case of non-compliance by Contractor, warning letter/Non-compliance shall be issued by Project Manager /Safety Officer of NTPC/Employer as per clause 22.3.3 (ii) of GCC. Further, if more than two such warning letters/Non Compliance Memos are issued in a quarter/three monthly period, above mentioned amount for that particular quarter/three month period shall be forfeited and shall not be payable to the Contractor under the contract.

(iii) Amount payable on providing requisite Safety Induction and Training

One fifth of the amount specified at G1.III.B (calculated as 0.18Y of Service portion amount of RA Bill), on quarterly basis, shall be paid upon certification by Project Manager in consultation with Safety dept. that Contractor has adhered to the requirements of imparting Safety training as per Clause 8.0 (Safety Induction and Training) of 'NTPC Safety Rules for Construction and Erection of Power Plants' to at least 90% of its employees/workmen (who have not been previously provided with requisite training) in a quarter/ three months period.

In case Contractor fails in meeting the aforesaid requirement, above mentioned amount for that particular quarter/three month period shall be forfeited and shall not be payable to the Contractor under the contract.

(iv) Amount payable on providing requisite Medical and First Aid Amenities

One fifth of the amount specified at G1.III.B (calculated as 0.18Y of Service portion amount of RA Bill), on quarterly basis, shall be paid upon certification by Project Manager in consultation with Safety dept. that Contractor has adhered to the requirements of Clause 13 (Medical and First Aid Amenities) of 'NTPC Safety Rules for Construction and Erection of Power Plants'.

In case Contractor fails to provide Medical and first aid amenities as per requirement of aforesaid Clause 13 even on one incidence in any quarter/three month period, above mentioned amount for that particular quarter/three month period shall be forfeited and shall not be payable to the Contractor under the contract.

(v) Amount payable on compliance to Work Permit System

One fifth of the amount specified at G1.III.B (calculated as 0.18Y of

Service portion amount of RA Bill), on quarterly basis, shall be paid upon certification by Project Manager in consultation with Safety dept. that Contractor has adhered to the requirements of Clause 17 (Work Permit System) of 'NTPC Safety Rules for Construction and Erection of Power Plants'.

In case of non-compliance by Contractor, warning letters/Non Compliance Memos shall be issued by Project Manager /Safety Officer of NTPC/Employer as per clause 22.3.3 (v) of GCC. In case of issuance of more than two such warning letters/Non Compliance Memos in a quarter/three monthly period, above mentioned amount for that particular quarter/three month period shall be forfeited and shall not be payable to the Contractor under the contract.

- IV.** In case 'Amount linked to Safety Aspects / compliance to Safety Rules' is less than **1 %** of the cumulative total of Service Portion of the Contract, i.e. Civil + Installation/ Erection + Structural Works, the amount by which it is lower shall be retained proportionately from the other components of Schedule-3 of the Contract price while releasing payments of each RA bill. No interest shall be payable on the amounts linked to Safety Aspects / Compliance to Safety Rules including aforesaid retained amount. The amounts linked to Safety Aspects / Compliance to Safety Rules including aforesaid retained amount shall be payable in part or full based on safety compliance duly certified by Project Manager and Safety-in-charge on quarterly basis.

H. Payment terms for Price Adjustment Amount

Any addition due to adjustment to the Contract Price shall be payable in the similar manner as provided in the clauses A, B, E, F and G above. The price adjustment amount corresponding to advance payment shall be clubbed with the first progressive payment of that equipment. Reduction to the Contract Price, if any, due to price adjustment provisions, shall be effected by recovering 100% of the reduction amount (including advance) from any of the Contractor's bills falling immediately due for payment.

I. Schedule – 7 & 7A: Payment Terms for Taxes & Duties

- i) Indian Custom Duties or levies including Stamp Duty and Import License Fee levied by the Government of India or any State Government in India on the Plant and Equipment including Mandatory Spares supplied from abroad (covered in Schedule-1) and on recommended spares (when ordered) supplied from abroad and covered in Schedule No.6, which are to be imported into India and which will become the property of the Employer, shall be paid directly by the Employer to the Government of India or the concerned authorities. However, if the local laws require such payment of the custom duty to be made by the Contractor, the same shall be reimbursed to the Contractor on production of satisfactory evidence of having paid the custom duty amount to the concerned authorities.

If the liability/ payment on account of Customs Duty/ import duty and GST on CIF price (Schedule-1) exceeds the amount quoted by the bidder in schedule-7A, at any time during the performance of the contract, such excess shall be recovered from the Contractor.

Notwithstanding the foregoing, if, after the date seven (7) days prior to the deadline set for Price Bid submission, the relevant Customs Acts &

Notification of Govt. of India is abrogated or changed (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently increases the taxes & duties quoted by the bidder in Schedule-7A, any such increase in taxes & duties shall be to the account of Employer

- ii) Notwithstanding the above, if the Contractor chooses to ship the equipment in Shipper's Containers, then the custom duty levied on such empty Containers shall not be borne by the Employer and shall be borne and payable/reimbursable by the Contractor. Further, Anti-dumping duty, Countervailing duty on subsidised articles, Safeguard duty etc. and any other tax including GST, levies, cess etc. applicable on such additional duties, if imposed on Plant and Equipment including Type Test and Mandatory Spares/ Recommended Spares, shall be borne by the Contractor.
- iii) 100% of applicable Taxes and Duties (other than the custom duty payable as in para (i) above) which are payable by the Employer under the Contract shall be paid/reimbursed to the Contractor or Assignee of foreign Contractor (if applicable) upon dispatch of equipment/spares and receipt of services and on production of satisfactory documentary evidence by the Contractor/Assignee, as applicable. However, GST as applicable on Advance payment shall be paid to the Contractor along with the Advance sanctioned. The GST paid along with advance shall be adjusted prorata against the tax due upon supply of goods/services, based on the value of the respective goods/services.

Further, subject to GCC Clause 14.4, payment / reimbursement of GST shall be restricted to the amount quoted in Schedule-7.

J. **Schedule - 8A / 8B (as applicable):** 100% of each Type Test Charges shall be paid to the Contractor upon conductance of the corresponding Type Test and Certification by the Engineer thereon.

K. **Schedule-4: Payment Terms for Annual Maintenance Contract (AMC):** The Payment for AMC shall be made on monthly prorata basis on certification by Employer's site representative regarding successful maintenance of the system by the Contractor.

L. **Additional Advance Payment**

An Additional Advance upto 5% of the Ex-works / Installation Services (including Civil Works) price component, apart from the Advance already provided for in the specified Terms of Payment, may be paid to the Contractor which shall be interest bearing and against Bank Guarantee of 110% of the advance requested and covering the interest charges. The advance amount shall be provided during various phases of Contract execution to meet the requirement of payment by the Contractor to the contractor's sub-vendors / sub-contractors but in aggregate shall not exceed 5% of the Ex- works / Installation Service (including Civil Works) Price Component. The advance amount shall be released in Indian Rupees only and Tax implication, if any, shall be to the account of the Contractor.

While applying for advance under this provision, the contractor shall provide a statement of past payment utilization evidencing the need for cash flow support and also plan for utilization of the amount requested as per above. The advance shall be provided in exceptional circumstances to enable work to be carried out. The

advance amount shall be transferred to an ESCROW account (to be opened by the Contractor in any Scheduled Bank of India under intimation to the Employer) and after availing the advance, the contractor will be required to submit proof of utilization, as per the recovery plan submitted to Employer. Sample format enclosed at Annexure-3 to Appendix-1.

The advance amounts shall be interest bearing and rate of interest to be notified by Employer from time to time. This advance shall not be lumpsum advance, but shall be provided in phases to tide over the financial constraints being faced by the contractor, along with the progress of work. The requirement of this advance shall be with the approval of the Head of Project.

The recovery of the interest component on the advance amount shall be made from subsequent progressive payments to be released to the contractor.

The period for which the interest to be calculated, shall be reckoned from the date of release of the Additional Advance(s) to the actual date of release of subsequent progressive payments as per the Plan to be agreed with the Contractor.

The advance Amount shall be recovered from the milestone payments to be agreed between Employer and the Contractor.

M. Schedule- 4 - Payment terms for Training

100% of amount for each training module shall be paid upon completion of the corresponding module on certification by the Employer.

The basis for the pro-rata payments at S. No. M above shall be the Billing Break-up (BBU) to be finalised subsequently after award of Contract.

PAYMENT PROCEDURES

The Procedures to be followed in making application for, certifying and making payments shall as follows:

1. **Payment Schedule/Price Break-Up for Payments**

- 1.1 The Contractor shall prepare and submit to the Employer for approval, a break-up of the Contract Price in the currencies of the Contract. It is expected that the Contractor shall indicate the price of a single item in one currency only. However, if the Contractor intends to receive payment for some items in more than one currency, the Contractor would be required to furnish a separate breakup and the payment for such items shall be made based on the agreed rates. The Contract Price break-up shall be interlinked with the agreed detailed PERT Network of the Contract setting forth starting and completion dates for the various key phases of the Facilities and the submitted Break-up of the Contract Price for Main Equipment supplies shall contain the date of dispatch necessarily. Any payment under the Contract, subsequent to Advance payment, shall be made only after the Contractor's price break-up is approved by the Employer. The aggregate sum of the Contractor's price break-up shall be equal to the Total Contract Price.

The Billing Breakup for Mandatory Spares shall be submitted to the Employer for approval as per the format enclosed as Annexure to this Appendix indicating therein the details such as Make, Model number, Drawing/Datasheet number and Part number of all spare items. The relevant drawings/documents shall be submitted along with the Billing Break Up.”

The Contractor shall, by the 15th April of every year, furnish the BBU value of supplies sourced from Micro and Small Enterprises (MSEs) along with the total BBU value of supplies dispatched by it during the preceding financial year as per the format enclosed as Annexure to this APPENDIX-1

2. **Currency of Payment**

- 2.1 The Contract Price shall be paid in the currency or currencies in which the various price components have been stated and as incorporated in the Contract.

3. **Application for Payment**

- 3.1 The Contractor shall submit application for the payment in the proforma enclosed. The Contractor shall submit to the Project Manager separate applications for payment in different currencies whenever payment is to be made in more than one currency.

Being EPC package, the Contractor shall necessarily be required to provide the single designated account for billing and payment. The BBU shall also be furnished accordingly. System wise/ Unit wise interaction/submission will not be entertained for BBU, Billing and Payment.

- 3.2 Each such application shall state the amount claimed and shall set forth in details, the order of the Payment Schedule, particulars of the Facilities including the Facilities executed at Site and of the equipment shipped/brought on to the Site pursuant to the Contract upto the date mentioned in the application and for the period covered since the last preceding certificate, if any.

- 3.3 Every interim payment certificate shall certify the Contract Value of the Facilities executed upto the date mentioned in the application for the payment certificate, provided that no sum shall be included in any interim payment certificate in respect of the Facilities that according to the decision of the Project Manager, does not comply with the Contract, or has been performed, at the date of certificate prematurely.
- 3.4 In case the Contractor is a non-resident/foreign company, the release of first progressive payment shall also be subject to submission of Certificate from Indian Tax Authority or Ruling determining the applicable rate of Income Tax in terms of relevant provisions of GCC clause on Taxes & Duties and acceptance of same by the Engineer-in-Charge.
- 3.5 The Employer has established a Vendor Payment portal where Vendor/Contractor shall submit their digital bill/invoice and may track its status. The Application for Payment along with all the supporting documents (for direct payment cases as mentioned in Para 5.2 below) shall be submitted by the Vendor/Contractor in digital form i.e. digitally signed with Class-2/3 digital Signature and must be uploaded in the Employer's Vendor Payment Portal. No hard/physical copy of such documents will be accepted by the Employer unless otherwise asked for in the PO or instructed by Employer.
- 3.6 Deleted

4. **Due Dates for Payment**

- 4.1 The advance payment amount shall be payable after fulfilment of all the conditions laid down in the Terms of Payment (Appendix 1 to the Contract Agreement) and receipt of the Contractor's invoice alongwith all necessary supporting documents for such advance payment. Employer will make progressive payment as and when the payment is due as per the Terms of Payment set forth in Appendix 1 to the Contract Agreement. Progressive payment other than that under the Letter of Credit will become due and payable by the Project Manager **within thirty (30) days** from the date of receipt of Contractor's bill/invoice/debit note by the Employer, provided the documents submitted are complete in all respects.

Contractor shall be required to raise its consolidated invoices/bills only once a month except for LC payments.

- 4.2 In cases of any discrepancy observed by the Employer in Contractor's bill, clarifications shall be sought in writing by the Employer within ten (10) days from the date of receipt of Contractor's bill/invoice/debit note by the Employer. The Contractor shall be required to submit the requisite clarifications within ten (10) days from the date of issuance of queries by the Employer. In case, no mutual agreement is reached between the Employer and the Contractor on any part of the bill/invoice, within ten (10) days of submission of clarification by the Contractor, the Contractor shall issue a revised bill/invoice to avoid mismatch in GST returns of the Employer and the Contractor. Payment against agreed and admissible part shall be processed as per payment procedure within ten (10) days after receipt of the revised bill/invoice. The bill/invoice for the balance amount under question may be separately submitted for consideration of the Employer after resolution of issues of payment by the Employer. In case of non-submission of satisfactory clarification by the Contractor within the stipulated period, NTPC/Employer shall not be liable for the delay in making payment. If the bill submitted by Contractor is incorrect and has gross discrepancies, the bill shall be summarily rejected and returned to the Contractor. In

the event of dispute, the same shall be settled as per GCC Clause (Settlement of Disputes).

- 4.3 The Employer has established a Vendor Bill tracking System where Vendor/Contractor can submit their bill/invoice and track its status.

5. **Mode of Payment**

- 5.1 The Employer will establish an irrevocable Letter of Credit (L/C) in favour of the Contractor through the Employer's Bank in Employer's country for payments due, as per Terms of Payment, on despatch of equipment including Mandatory Spares i.e. Ex-Works / CIF despatch of equipment including Mandatory Spares (including due payments towards Ocean Freight and Marine Insurance). The value of L/C will be as per payment schedule for each quarter and valid for a quarter. It will be the responsibility of the Contractor to utilise the L/C to the fullest extent. In case L/C has been established by the Employer and not utilised by the Contractor, for reasons of delay attributable to him, all reinstatement charges for the L/C for further period necessitated due to non-utilisation of L/C will be to the account of the Contractor.

- 5.2 The payment of the advance amount, Type Test Charges if any, price adjustment amounts, all other supply payments, taxes and duties (wherever admissible) inland transportation (including port handling if any) insurance and the Installation Portion of the Facilities including Civil, Structural and Allied Works (if any), shall be made direct to the Contractor by the Employer and no L/C shall be established by the Employer for such payments. Wherever technically feasible, such payments shall be made electronically only as per details of Bank Account indicated in the contract. In case of any changes to the bank account indicated in the contract, the contractor shall immediately inform the employer. The Contractor shall hold the employer harmless and employer shall not be liable for any direct, indirect or consequential loss or damage sustained by the bidder on account of any error in the information or change in Bank details provided to the employer in the prescribed form without information to employer duly acknowledged.

5.3 **For Payments related to Erection / Civil / Site Fabricated Structural works/ items under Schedule-4**

A single designated ESCROW account shall be opened by the Contractor in any Scheduled Bank of India under intimation to Employer. All payments related to Erection / Civil / Site Fabricated Structural works/ items under Schedule-4 by the Employer due under the contract to the Contractor shall be released into above-mentioned ESCROW account set up as per the Tri-Partite Escrow Agreement between Employer, Contractor and Escrow Bank. The payment shall be disbursed in accordance with the mechanism set out in the Contract and Escrow Agreement. The purpose of the Escrow Account would be to ensure that payments received under the contract are solely used for implementation of the Contract. Under Tri-partite Escrow Agreement, the Escrow Bank will agree to ensure that amounts received in the ESCROW Account are utilized for making payments only to suppliers of goods and services, statutory authorities, establishment expenses etc. as may be required in the performance of the contract.

All expenses/charges for opening /operation (including Annual Fee) of the Escrow Account shall be paid by the Contractor.

The revised draft agreement is annexed as Annexure-III to this Appendix-1, which

shall be followed for executing Escrow Account Agreement.

The Detailed Operative Procedure and Terms and Conditions of Escrow Account (Schedule III of draft agreement) shall be finalized between the Employer, Contractor and the Escrow Bank within 15 days of the placement of award.

- 6.0** Contractor shall be required to raise its consolidated invoices/bills only once a month except for LC payments.

FORM OF APPLICATION FOR PAYMENTS

Project :
Equipment Package : Date :
Name of Contractor : Contract No. :
Contract Value : Contact Name :
Unit Reference : Application Serial
Number :

To

..... *
(Name of Employer)

Dear sir

APPLICATION FOR PAYMENT

1. Pursuant to the above referred Contract Agreement dated the undersigned hereby applies for payment of the sum of (Specify amount and currency in which claim is made).
2. The above amount is on account of : (check whichever applicable)

Advance Payment (Schedule **)

Interim Payment as Advance (Schedule **)

Progressive Payment against despatch of equipment (Schedule **)

Progressive Payment against receipt of equipment (Schedule **)

Progressive Payment against Installation (Schedule **)

Ocean Freight & Marine Insurance (Schedule **)

Inland Transportation (Schedule **)

Inland Insurance

Price Adjustment

Extra Work not specified in Contract
(Ref. Contract Change Order No.....)

Others (specify)

Final Payment (Schedule **)

as detailed in the attached schedule(s) which form an integral part of this application.

3. The payment claimed is as per item(s) No (s) of the payment schedule annexed to the above mentioned Contract.

4. The application consists of this page, a summary of claim statement (Schedule **), and the following signed schedules

1 -----

2 -----

3 -----

The following documents are also enclosed :

1 -----

2 -----

3 -----

Signature of Contractor/
authorised Signatory

* Application for payment will be made to 'Project Manager' as to be designated for this purpose at the time of Notification of Award.

Prepare separate application for claims in different currencies.

** Proforma for the Schedules will be mutually discussed and agreed to during the finalisation of the Contract Agreement.

Annexure-1 to APPENDIX-1

Format of Billing Break-up for Mandatory Spares:

PROJECT:.....	CLIENT:.....
PACKAGE:	
TITLE: BILLING BREAK-UP FOR MANDATORY SPARES	CONTRACTOR:.....
NOA REF. ;.....	
BILLING BREAK-UP NO.....	

[illegible]

Annexure-2 to
APPENDIX-1

Proforma for details to be furnished by the Contractor by 15th April of every financial year of supplies sourced from MSEs dispatched during the preceding financial year.

Packag
e
Name:
Project
Name:
Name of the
Contractor:
COA No.:

Details of BBU value of supplies dispatched during the preceding financial year
..... are furnished here below:

BBU value of total supplies dispatched (A) (in eqvt INR)	Out of the total supplies dispatched, BBU value of supplies sourced from MSEs (B) (in eqvt INR)	Percentage of supplies sourced from MSEs wrt total supplies dispatched (C = B*100/A) (%)
.....		

In case of no supplies sourced from MSEs, mention 'NIL'.

I, on behalf of M/s (*Contractor*) hereby declare that the information
furnished above is correct.

Signature

.....
Name.....
Designation and Seal
.....

PRICE ADJUSTMENT

- (i) The Contract price shall be subject to price adjustment during performance of the Contract to reflect changes in the cost of labour and material components etc. in accordance with the provisions described below:
- (ii) The price adjustment provisions shall be applicable separately for price components relating to Supply of Equipment including spare parts, Installation, Civil and Structural Works, as per price break-up furnished by the Contractor in Schedule-1/ Schedule-2/ Schedule-6 and Schedule-4. The Price Adjustment shall be without any Ceiling.
- (iii) Only following components of the Contract Price will be subject to Price adjustment:
 - (a) Ex-Works (India) Price {Ex-works excluding Import Content / Import Content (if any) in Ex-works separately} of Plant and Equipment including Mandatory Spares manufactured within the Employer's Country, but excluding Type Tests Charges (covered in Schedule 2) and FOB Price Component for Plant and Equipment including Mandatory Spares supplied from abroad, but excluding Type Tests Charges (covered in Schedule 1).
 - (b) Installation Price Component of Contract Price (covered in Schedule 4) consisting of Erection portion.
 - (c) Civil Works price component of Contract Price (covered in Schedule-4) excluding Demolition of existing structures (if applicable) price.
 - (d) Site Fabricated Structural Works price component of Contract Price (covered in Schedule-4).
 - (e) Ex-Works (India) Price {Ex-works excluding Import Content / Import Content (if any) in Ex-works separately} of Recommended Mandatory Spares manufactured within the Employer's Country and FOB Price Component for Recommended Mandatory Spares supplied from abroad (both covered in Schedule 6)."
- (iv) Price adjustment amounts towards aforesaid components of Contract Price shall be paid in the respective currencies of Contract.
- (v) The indices for price adjustment shall necessarily be of the country of origin of goods/labour and shall be well established and nationally recognised in that country. Preferably Government indices shall be used.
- (vi) The price adjustment formula for the components of the Contract Price, as mentioned at Sl.No. (iii) above shall be as stipulated hereinafter.
- (vii) Ex-Works {Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges"**

It is understood that the price component of the equipments for any shipment/despatch comprises of a fixed portion (designated as 'F' and the value of which is specified hereunder) and a variable portion linked with the indices for various materials and labour (description and co-efficients as enumerated below).

The amount of price adjustment towards variable portion payable/recoverable on each shipment/despatch shall be computed as under:

$$EC = EC_1 - EC_0$$

EC₁ will be computed as follows :

$$EC_1 = EC_0 \left\{ F + a \times \frac{A_1}{A_0} \times f_1 + b \times \frac{B_1}{B_0} \times f_2 + c \times \frac{C_1}{C_0} \times f_3 + \dots \right. \\ \left. + Lb \times \frac{L_1}{L_0} \times f_{Lb} \right\}$$

Where

EC = Adjustment to Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Price Component expressed in the currency of the Contract payable to the contractor for each shipment/despatch.

EC₁ = Adjusted Amount of Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Price Component expressed in the currency of the Contract payable to the Contractor for each shipment/despatch.

EC₀ = Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Price for the plant and equipments in the currency of the Contract, shipment/dispatch wise.

- The fixed portion of the Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Component of the Contract Price (F) shall be 0.15.
- a,b,c etc. shall be co-efficients of major materials/items involved in the Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Component of the Contract Price. The sum of these co-efficients shall be between 0.50 to 0.60.
- A,B,C etc. shall be published price indices of corresponding major materials/items. Such indices shall necessarily be of the country of origin of goods.
- 'Lb' shall be co-efficient for labour component in the Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Component of the Contract Price which shall be between 0.25 to 0.35.

'L' shall be labour index.

- Sum of all the material co-efficients and the labour co-efficient shall be 0.85.

f₁, f₂, f₃ etc. are Exchange Rate Correction Factors for the respective materials and f_{Lb} is the Exchange Rate Correction Factor for labour with reference to the currency of the country of origin of index and the respective Contract currency, such that

$$f = \frac{Z_0}{Z_1}$$

where Z is the no. of units of the currency of the country of the origin of index, which is equivalent to one unit of the respective Contract currency. The exchange rates to be used for calculation of factor 'f' shall be as per Bills Selling Exchange Rates established by the STATE BANK OF INDIA.

For the indices, subscript 'o' refers to indices as on 30 days prior to date of opening of Envelope-I & II (Techno-commercial) bids. For 'Z_o' subscript 'o' refers to value as on the date of opening of Envelope-I & II (Techno-commercial) bids.

Subscript '1' refers to indices/exchange rates as of :

- (a) three months (for Labour Indices) /ninety (90) days (for Exchange Rates) prior to the date of shipment/despatch for labour and Exchange Rates respectively, and
- (b) at the expiry of two third (2/3) period from the date of Notification of Award to the date of shipment/despatch, for material.

For the purpose of this clause the date of shipment/despatch shall mean the schedule date of shipment/despatch or actual date of shipment/despatch, whichever is earlier. The schedule date of shipment/despatch shall be as identified in line with provisions of Time Schedule, Appendix-4 to the Contract Agreement.

In case of shipments/dispatches which are delayed beyond the schedule date of shipment/despatch for reasons attributable to the Contractor the price adjustment provision shall not be applicable for the period of time between the schedule date of shipment/despatch and the actual date of shipment/despatch. For this purpose, the schedule date of shipment/despatch shall be as identified in line with provisions of Time Schedule, Appendix-4 to the Contract Agreement.

The above formula for price adjustment will be applicable if the currency in which the Contract Price is expressed is different from the currency of the country of origin of labour and material indices. In other cases, formula shall be applied without the Exchange Rate Correction Factor 'f'.

(viii) For Installation Price Component (excluding Civil Works and Site Fabricated Structural Works component) of the Contract:

- i) It is understood that the price component for erection portion of Installation Services comprises a fixed portion and variable portion linked with the index of labour (description and co-efficients as enumerated).

The monthly price adjustment amount for the erection portion of Installation Services component will be computed as per the formula given below :

a) Indian Rupee Portion of the Installation Services

$$ER = ER1 - ER_o$$

ER1 will be computed as follows :

$$ER1 = ERo (0.15 + 0.5 \times 0.85 \frac{L_1}{Lo} + 0.5 \times 0.85 \frac{W_1}{Wo})$$

Where :

ER = Adjustment to Erection portion of Installation Services component of contract price expressed in Indian Rupees payable to the contractor for each billing.

ER1 = Adjusted amount of Erection portion of Installation Services component of contract price expressed in Indian Rupees payable to the Contractor.

ER0 = Value of the Erection work done in the billing period, which shall be calculated as under:

For the purpose of computing ERo, each Erection bill (which is excluding initial Advance and amount payable on attainment of full load, on successful completion of Initial Operation and on successful completion of Guarantee test) during the Erection period upto the 'Completion of the Facilities' shall be divided by a factor as indicated below:

Erection portion of Installation - [Initial Advance amount + Erection Services component of the Contract Price	Portion of Installation Services component of the Contract Price payable on attainment of full load + Erection Portion of Installation Services component of the Contract Price payable on successful completion of Initial Operation + Erection Portion of Installation Services component of the Contract Price payable on successful completion of Guarantee test]

Erection Portion of Installation Services component of the Contract Price

The payment of price adjustment amount so computed (refer Sr.No. H, Appendix-1) shall be made against a separate invoice, linking the corresponding invoice for Erection Portion of Installation Services payment after retaining the pro-rata amount due on attainment of full load, on successful completion of Initial Operation and on Completion of the Guarantee Test. The amounts so retained shall be paid on attainment of full load, on successful completion of Initial Operation and on successful completion of Guarantee Test respectively.

L = Indian field labour Namely, All India Consumer Price Index for Industrial Workers (All India Monthly Average) as published by Labour Bureau, Simla, Government of India.

F = Fixed Price component =0.15

W = The other Index for Indian field labour Namely, **Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher**

Subscript 'o' refers to indices / minimum wages as on 30 days prior to date of opening of Envelope-I & II (Techno-commercial bids)

Subscript '1' refers to the indices / minimum wages as applicable for the month of execution of the Installation work.

In case there is a revision in the applicable minimum wages during a month, calculation of 'W1' would take into consideration the weighted average of the applicable wages (wage before revision and wage after revision) and the number of days of applicability of such wages in the month.

For the purpose of this clause, month of execution of installation work shall mean the schedule month of execution of the installation work or actual month of execution of the installation work, whichever is earlier. The schedule date for completion of a particular installation activity shall be as identified in line with provisions of Time schedule, Appendix-4 to the Contract Agreement.

In case of installation activities which are delayed beyond the schedule date for reasons attributable to the contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of completion and actual date of completion of the respective installation activity. For this purpose, the schedule date for completion of a particular installation activity shall be as identified in line with provisions of Time Schedule, Appendix-4 to the Contract Agreement.

(b) Foreign Currency Portion of the Installation Services

$$EE = EE_1 - EE_0$$

EE₁ will be computed as follows:

$$EE_1 = EE_0 (0.15 + 0.85 \frac{EF_1}{EF_0} \times f)$$

Where

EE = Adjustment to Installation Services Component of Contract Price expressed in foreign currency payable to the contractor for each billing.

EE₁ = Adjusted Amount of Installation Services Component of Contract Price expressed in foreign currency payable to the contractor for each billing.

EE₀ = Value of foreign currency portion of Erection Work done in the billing period which shall be calculated as under :

For the purpose of computing EE₀, each bill (which is excluding Initial

Advance and amount payable on attainment of full load, on successful completion of Initial Operation and on successful Completion of the Guarantee Tests) during the Erection period upto the 'Completion of the Facilities' shall be divided by a factor as indicated below:

Installation Component of the - Contract Price	[Initial Advance Amount + Installation Component of the Contract Price payable on attainment of Full Load + Installation Component of the Contract Price payable on successful completion of Initial Operation + Installation Component of the Contract Price payable on successful completion of Guarantee Tests]

Installation Component of the Contract Price

The payment of price adjustment amount so computed (refer S.No. H, Appendix-1) shall be made against a separate invoice, linking the corresponding invoice for Erection Portion of Installation payment after retaining the pro-rata amount due on attainment of Full Load, on successful completion of Initial Operation and on Completion of the Guarantee Tests. The amount so retained shall be paid on attainment of Full Load, on successful completion of Initial Operation and on successful completion of the Guarantee Tests respectively.

EF = Index for Expatriate Field Labour Component of the Erection Price of Installation Work. Such index shall necessarily be of the country of nationality of the labour.

f = Exchange Rate Correction Factor for Expatriate Labour with reference to currency of country of origin of index for expatriate labour and the respective Contract currency, such that

$$f = Z_0 / Z_1$$

where Z is the no. of units of the currency of the country of origin of index, which is equivalent to one unit of the respective Contract currency. The exchange rates to be used for calculation of factor 'f' shall be as per Bills Selling Exchange Rates established by the STATE BANK OF INDIA.

For the indices, Subscript 'o' refers to indices as on 30 days prior to date of opening of Envelope-I (Techno-commercial bids. **For 'Z_o', subscript 'o' refers to value as on the date of submission of Envelope-I & II(Techno-commercial) bids.**

For the indices, subscript '1' refers to the indices as applicable for the month of execution of the erection work. In case there is a revision in the applicable minimum wages during a month, calculation of 'W₁' would take into consideration the weighted average of the applicable wages (wage before revision and wage after revision) and the number of days of applicability of such wages in the month. **For the exchange rates, subscript '1' refers to the exchange rates as applicable on the last day of the month of execution of the erection work.** For the purpose of this clause, month of execution of erection work shall mean the schedule month of execution of the erection work or actual month of execution of the erection work, whichever is earlier. The schedule date for completion of a particular erection activity shall be as identified in line with provisions of Time schedule, Appendix-4 to the Contract Agreement.

The above formula for foreign exchange portion of Installation Component of Contract Price shall be applicable if the currency in which the contract price has been expressed is different from the currency of country of origin of indices for foreign labour. In other cases, the formula shall be applied without

exchange rate correction factor 'f'.

In case of erection activities which are delayed beyond the schedule date for reasons attributable to the contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of completion and actual date of completion of the respective erection activity. For this purpose, the schedule date for completion of a particular erection activity shall be as **identified in line with provisions of Time Schedule, Appendix-4 to the Contract Agreement.**

(ix) Site Fabricated Structural Works Price Component

It is understood that the Structural Works Price Component comprises a fixed portion (designated as 'F' and the value of which is specified hereunder) and variable portion linked with the indices for various materials and labour (description and coefficients as enumerated below).

The amount of price adjustment towards variable portion payable/recoverable shall be computed as follows :

$$ESW = ESW1 - ESWo$$

ESW1 will be computed as follows :

$$ESW1 = ESWo \left\{ F + a \times \frac{A_1}{A_o} + b \times \frac{B_1}{B_o} + 0.5 \times Lb \times \frac{L_1}{L_o} + 0.5 \times Lb \times \frac{W_1}{W_o} \right\}$$

Where,

ESW = Adjustment to Structural Works Price Component expressed in the currency of the Contract.

ESW1 = Adjusted amount of Structural Works Price Component expressed in the currency of the Contract.

For the purpose of computing ESWo, each structural bill (which is excluding initial advance and amount payable on attainment of full load, on successful completion of Initial Operation and on successful Completion of the Guarantee Tests) during the structural work period upto the completion of the facilities' shall be divided by a factor as indicated below :

Structural Component of the contract price	-	{Initial Advance amount + structural component of the contract price payable on attainment of full load, on successful completion of Initial Operation and on successful Completion of the Guarantee Tests }

Structural Component of the Contract Price

The payment of price adjustment amount so computed (refer S.No. H, Appendix-1) shall be made against a separate invoice, linking the corresponding invoice for Structural Work Portion of Installation payment after retaining the pro-rata amount due on attainment of Full Load, on successful completion of Initial Operation and on Completion of the Guarantee Tests. The amount so retained shall be paid on attainment of Full Load, on successful completion of Initial Operation and on Completion of the Guarantee Tests respectively.

F = The fixed portion of the Structural Works Price Component shall be 0.20.

- a, b shall be co-efficient of major materials/items involved in the Structural Works Price Component of the Contract Price.

- A, B shall be published price indices of corresponding major material/items.
- "Lb" shall be co-efficient for labour component for Structural Works Price Component of Contract Price which shall be 0.15.
- **L shall be one of the labour indices, namely, Consumer Price Index for Industrial Workers (Gen.) applicable to "All India" as published by Labour Bureau, Shimla of the Govt. of India.**
- **W shall be the other labour index, which is the Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher**
- - Sum of all the material co-efficient and the labour coefficient shall be 0.80.

Subscript '0' refers to indices as on 7 days prior to date of opening of Envelope-I & II (Techno-commercial).

subscript '1' refers to the indices/ minimum wages as applicable for one month prior to the month of execution of the structural work except "Structural Steel" For 'Structural Steel the index, '1' refers to the indices as applicable for 90 days prior to the month of execution of the structural work.

In case there is a revision in the applicable minimum wages during a month, calculation of 'W₁' would take into consideration the weighted average of the applicable wages (wage before revision and wage after revision) and the number of days of applicability of such wages in the month.

For the purpose of this clause, month of execution of structural work shall mean the schedule month of execution of the structural work or actual month of execution of Structural Work, whichever is earlier. The schedule date for completion shall be as identified in line with provisions of Time Schedule, Appendix-4 to the Contract Agreement.

In case of Structural Works activities which are delayed beyond the schedule date for reasons attributable to the contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of completion and actual date of completion of the respective Structural activity. For this purpose, the schedule date for completion of a particular Structural activity shall be as identified in line with provisions of Time Schedule, Appendix-4 to the Contract Agreement.

(x) Price adjustment for civil works component of the Contract Price [including construction materials and excluding Demolition of existing structures (if applicable) price]

The prices quoted by the bidder shall be base price, which will be subjected to price adjustment in accordance with the conditions and formula prescribed herein and further subject to satisfying the requirement specified in this clause.

A fixed percentage of the civil works component of the contract price shall be firm and shall not be subject to any price adjustment. The balance portion of the civil works component of the contract price shall be subject to price adjustment on account of changes in materials and labour as detailed below :

$$CV = CV1 - CV0$$

CV1 will be computed as follows :

$$CV1 = CVo (F + m \times \frac{M_1}{M_o} + d \times \frac{D_1}{D_o} + s \times \frac{S_1}{S_o} + c \times \frac{C_1}{C_o} + 0.5 \times Lb \times \frac{L_1}{L_o} + 0.5 \times Lb \times \frac{W_1}{W_o})$$

Where,

CV = Adjustment to civil works component expressed in the currency of the contract payable to the contractor for each billing period.

CV1 = Adjusted amount of Civil Works Price Component of contract price i.e. value of work done after application of above price adjustment formula in the billing period.

CVo = Base Value of Civil Works Price Component of contract price, i.e. the value of the Civil work done in the billing period as per the monthly billing schedule for which the price adjustment is to be calculated.

CVo shall be calculated as under:

Each Civil Works bill (which is excluding initial advance and amount payable on attainment of full load, on successful completion of Initial Operation and on successful Completion of the Guarantee Tests) during the Civil Works period upto the 'completion of the facilities' shall be divided by a factor as indicated below :

Civil Works Component of the contract price	-	{Initial Advance amount + Civil Works component of the contract price payable on attainment of Full Load + Civil Works Component of the Contract Price payable on successful completion of Initial Operation + Civil Works Component of the Contract Price payable on successful completion of Guarantee Tests}

Civil Works Component of the Contract Price

The payment of price adjustment amount so computed (refer S.No. H, Appendix-1) shall be made against a separate invoice, linking the corresponding invoice for Civil Works Portion of Installation payment after retaining the pro-rata amount due on attainment of Full Load, on successful completion of Initial Operation and on Completion of the Guarantee Tests. The amount so retained shall be paid on attainment of Full Load, on successful completion of Initial Operation and on Completion of the Guarantee Tests.

F = Fixed portion of the contract price which will not be subjected to any adjustment under this formula or otherwise which will be 0.20.

m = Coefficient of material (excluding cement & steel) content in the cost of civil portion of the work which will be 0.15.

d = Coefficient of High Speed Diesel Oil (P.O.L) content in the cost of civil portion of the work which will be 0.05.

- s = Coefficient of steel content in the cost of civil portion of work which will be 0.25.
- c = Coefficient of cement content in the cost of civil portion of work which will be 0.10.
- Lb = Coefficient of labour (for all categories) content in the cost of civil portion of the work which will be 0.25.
- M = Material Index, namely, Index No. of wholesale price under group. "All commodities" as published by office of the Economic Adviser, Government of India.
- D = High Speed Diesel Oil price, namely price of High Speed diesel oil, at Pump Station of India Oil Corporation nearest to the project site. (selling price inclusive of taxes and duties as per litre of H.S.D. Oil).
- S = Index for steel content shall be "Mild Steel-Long Products"/ "Mild Steel-Flat Products" as published by Ministry of Commerce and Industry, GOI.
- C = Index for "Pozzolana Cement " as published by Ministry of Commerce and Industry, GOI ~~under subgroup "Manufacture of cement, lime and plaster" under the group of "Manufacture of other Non-Metallic Mineral Products".~~
- L = Labour Indices, namely, Consumer Price Index for Industrial Workers (Gen.) applicable to "All India" as published by Labour Bureau. Shimla of the Govt. of India.**
- W = Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher**

Subscript

- 'o' = Refers, to the values of above mentioned minimum wages, labour, material, steel and cement indices, and for diesel price as on 7 days prior to date of opening of Envelope-I & II (Techno-commercial) bids.
- '1' = Refers to values of corresponding minimum wages, labour, material, steel and cement indices, and for diesel price as applicable for one month prior to month in which the Civil work is executed.

In case there is a revision in the applicable minimum wages during a month, calculation of 'W₁' would take into consideration the weighted average of the applicable wages (wage before revision and wage after revision) and the number of days of applicability of such wages in the month.

For the purpose of this clause, month of execution of civil work shall mean the schedule month of execution of Civil work or actual month of execution of Civil Work, whichever is earlier. The schedule date for completion shall be as identified in line with provisions of Time Schedule, Appendix-4 to the Contract Agreement.

In case of Civil Works activities which are delayed beyond the schedule date for reasons attributable to the contractor, the price adjustment provision shall not be applicable for the period of time between the schedule date of completion and actual date of completion of the respective Civil Work activity. For this purpose, the schedule date for completion of a particular Civil Work activity shall be as identified in line with provisions of Time Schedule, Appendix-4 to the Contract Agreement.

- (xi) The following components of the contract price shall not be subject to price adjustment and

shall remain firm during the execution of the contract :

- (1) Ocean Freight and Marine Insurance for Plant and Equipment, mandatory spares and recommended spares.
 - (2) Inland Transportation charges (including Inland Transit Insurance, port clearance, port handling & port charges) for plant & equipment and Spare Parts.
 - (3) Type Test Charges (if any)
 - (4) Training Charges (if any)
 - (5) Annual Maintenance Contract (AMC) Charges (if any).
 - (6) Demolition of existing structures component of Contract Price (if applicable)
- (xii) The value of co-efficients and the source of applicable indices and their base values for the purpose of computing price adjustment under the contract shall be as under:

A. Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Steam Generator Systems excl. Factory Fabricated Structures, Electrical Systems & C&I System as specified in Technical Specification and in coherence to Price Schedule)*

S.No.	Item	Value of Coefficient	Name of published index and its origin	Value of Base Date Indices (as on 30 days prior to deadline set for submission of Techno-Commercial bids.)

Fixed Portion F=0.15

Material :

1. a =
2. b =
3. c =
.....
.....
4. Labour : Lb =

B. Ex-Works/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Steam Turbine Generator Systems excl. Factory Fabricated Structures, Electrical Systems and C&I System as specified in Technical Specification and in coherence to Price Schedule)*

S.No.	Item	Value of Coefficient	Name of published index and its origin	Value of Base Date Indices (as on 30 days prior to deadline set for Submission of Techno-Commercial bids)

Fixed Portion F=0.15

Material :

1. a =
2. b =
3. c =
.....
4. Labour : Lb =

C. Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Balance of Plant Systems excl. Factory Fabricated Structures, Electrical Systems and C&I System as specified in Technical Specification and in coherence to Price Schedule)*

S.No.	Item	Value of Coefficient	Name of published index and its origin	Value of Base Date Indices (as on 30 days prior to deadline set for Submission of Techno-Commercial bids)

Fixed Portion F=0.15

Material :

1. a =
2. b =
3. c =
.....
4. Labour : Lb =

D. Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Electrical Systems and C&I System as specified in Technical Specification and in coherence to Price Schedule)*

S.No.	Item	Value of Coefficient	Name of published index and its origin	Value of Base Date Indices (as on 30 days prior to deadline set for Submission of Techno-Commercial bids)

Fixed Portion F=0.15

Material :

1. a =
2. b =
3. c =
.....

4. Labour : Lb =

E. Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Factory Fabricated Structures as specified in Technical Specification and in coherence to Price Schedule)*

S.No.	Item	Value of Coefficient	Name of published index and its origin	Value of Base Date Indices (as on 30 days prior to deadline set for Submission of Techno-Commercial bids)

Fixed Portion F=0.15

Material :

a)	Hot Rolled Coils & Sheets	(a) 0.45	Index for "Hot Rolled (HR) Coils & Sheets, including Narrow Strip" under sub-group of "Mild Steel -Flat Products" under Group of "Manufacture of Basic Metals" as published by Ministry of Commerce and Industry, GOI
b)	Manufacture of fabricated Metal Products-Structural Metal Product	(b) 0.15	Index for "Manufacture of structural metal products" under Group of "Manufacture of Fabricated metal products, except Machinery and Equipment" as published by Ministry of Commerce and Industry, GOI

Labour :

Lb = **0.25** Consumer price index for industrial workers (All India General) as published by Labour Bureau, Shimla.

F. Ex-Works{Ex-works excluding Import Content / Import Content (if any) in Ex-works separately}/FOB Price Component of Plant and Equipments including spares, but excluding Type Tests Charges (Any other Items not covered in A to E above, in coherence to Price Schedule)*

S.No.	Item	Value of Coefficient	Name of published index and its origin	Value of Base Date Indices (as on 30 days prior to deadline set for Submission of Techno-Commercial bids)

Fixed Portion F=0.15

Material :

5. a =
6. b =
7. c =
.....
8. Labour : Lb =

G. Installation Price Component*

S.No.	Item	Value of Coefficient	Name of published index and its origin	Value of Base Date Indices (as on 30 days prior to deadline set for Submission of Techno-Commercial bids)

Fixed Portion F = 0.15

Indian Field Labour

(i)	0.5 x 0.85	All India Consumer Price index for industrial workers (All Indian Monthly Average) published by Labour Bureau, Simla, Govt. of India
(ii)	0.5 x 0.85	Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher

Expatriate Labour (EF) 0.85

H. Civil Works Price Component*

Item	Index	Value of Coefficients	Name of published index and its origin	Value of Base date Indices as on 7 days prior to deadline set for submission of Techno-Commercial Bids

Fixed Portion F = 0.20

1. Labour

(i) $0.5 \times L_b = 0.5 \times 0.25$ Consumer price index for industrial workers (All India General) as published by Labour Bureau, Shimla.

(ii) $0.5 \times L_b = 0.5 \times 0.25$ **Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher**

2. Material $m = 0.15$ (excluding cement & steel) Index no. of wholesale Price under group "All Commodities" as published by Ministry of Commerce and Industry, GOI
3. High Speed Diesel $d = 0.05$ Price of high speed diesel oil per litre at the Indian Oil Corpn. outlet nearest to the project (selling price inclusive of taxes & duties, if any)
4. Steel $s = 0.25$ Index for steel content shall be " Mild Steel -Long Products / **"Mild Steel-Flat Products"** as published by Ministry of Commerce and Industry, GOI.
5. Cement $c = 0.10$ Index for " Pozzolana Cement " as published by Ministry of Commerce and Industry, GOI.

D Site Fabricated Structural Works Price Component*

Item	Coefficient	Value of Coefficients	Name of published index and its origin	Value of Base Indices (as on 7 days prior to deadline set for submission of Techno-commercial Bids)

Material :

- a) Hot Rolled Coils & Sheets (a) 0.50 Index for "Hot Rolled (HR) Coils & Sheets, including Narrow Strip" under sub-group of "Mild Steel -Flat Products" under Group of "Manufacture of Basic Metals" as published

by Ministry of Commerce and
Industry, GOI

b)	Manufacture of fabricated Metal Products-Structural Metal Product	(b)	0.15	Index for "Manufacture of structural metal products" under Group of "Manufacture of Fabricated metal products, except Machinery and Equipment" as published by Ministry of Commerce and Industry, GOI
c)	Labour :			
	(i)		0.5 x I = 0.5 x 0.15	Consumer price index for industrial workers (All India General) as published by Labour Bureau, Shimla.
	(ii)		0.5 x I = 0.5 x 0.15	Arithmetical average of Minimum Wages for Unskilled, Skilled, Semi-skilled and Highly skilled workers notified by the Central Government for the particular classified Area in which the project site is located or notified by the State Government of the state in which the project site is located, whichever is higher
d)	Fixed Component :		F_s	0.20

* The above information shall be filled in at the time of Contract Agreement signing based on price adjustment data offered by the bidder in Attachment-9(P) to Bid Form of Techno-Commercial Bids and/or as mutually discussed and agreed upon.

Note: Bidder is required to necessarily quote the indices w.r.t. price adjustment for each component of price schedules for which the price break-up has been asked for/furnished such as SG System, STG System, BOP Systems, Electrical and C&I System and Factory Fabricated Structures.

INSURANCE REQUIREMENTS

(1) Insurance to be taken by the Contractor :

In accordance with the provisions of GCC Clause 34, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintain in effect, during the performance of the Contract, the insurances set forth below in sums and with the deductibles and other conditions specified. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, such approval not to be unreasonably withheld.

Insurance	Amount insured	Deductible	Conditions
A. Marine Cargo	(i) 110% of CIF Value in case of Plant and Equipments including all spare parts and Type Tests Charges to be supplied from abroad and/or Not applicable 110% of Ex-Works Value in case of Plant & Equipments and Type Tests Charges including all spare parts manufactured within the Employer's Country. (ii) Applicable Taxes and Duties (iii) Escalation 5% on (i) & (ii)		(i) Employer to be named as coinsured (ii) Open Policy (iii) All Risk Institute Cargo Clause 'A' (iv) War, SRCC, Terrorism. (v) Institute Replacement Clause, Special Replacement Clause (Air Duty) and Deferred Unpacking Clause (vi) Insurers right of subrogation against all parties (excluding carrier) waived. (vii) Warehouse to Warehouse basis.
B. Installation all Risk	(i) 110% of CIF Value plus 110% of Ex-Works Value of Plant & Equipments (ii) Applicable Taxes and Duties (iii) Cost of free issue materials, if any. (iv) Cost of Erection Works (v) Cost of Civil, Structural & Allied Works (vi) 10% Escalation on (i),(ii),(iii),(iv) & (v)	Minimum as per Insurance Policy	(i) Installation Risk, RSMTD, (ii) Air Freight Cover. (iii) Extra Charge Cover. (iv) Maintenance Cover (v) Contractor's Plant & Machinery - Rs. 100 Lakhs. (vi) Cross Liability. (vii) Additional Customs Duty for Imported Machine (if any) for adequate value. (viii) Employer & Contractor's Sub-Contractor to be named as co-insured.
C. Third Party Liability (Extension of MCE/EAR Policy)	For any one occurrence Rs. 50.00 Lakhs	Nil	(i) Contractors, sub-contractors to be named as co-insured.
I. Automobile Liability			
(i) M.V. Policy for Motor Vehicles, Private Cars & Commercial Vehicles		-----	As per local M.V. Act.
(ii) CPM Policy for Heavy Construction Equipment	Anything above Rs.100 Lakhs covered under Erection all Risk Policy		

Insurance	Amount insured	Deductible	Conditions
J. Workmen's Compensation	_____As per statute _____		
K. Employer's Liability	_____As per statute _____		Cumulative to workmen's compensation to cover liability not covered thereby.
L. Group Personal Insurance, for Contractor's & Sub-contractor's Employees			

Note :

1. The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC 34.1 except for Third Party Liability, Workman's Compensation and Employer's Liability Insurances and the Contractor's Sub-Contractors shall be named as co-insured under all insurances policies taken out by the Contractor pursuant to GCC 34.1, except for the Cargo Insurance during Transport, Workman's Compensation and Employer's Liability Insurances. All insurers rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies.
2. Notwithstanding the insurance requirements mentioned above, it would be the Contractor's responsibility to take adequate insurance cover as may be pertinent to protect his interest and interest of the Employer. If at any point of time during execution of the Contract, the insurance policies are found to be inadequate, the Contractor shall take fresh insurance policies meeting aforesaid requirements. The Employer reserves the right to make suitable recovery from the Contractor, if any.
3. Any loss or damage to the plant and equipments during handling, transportation, storage, installation, commissioning, and all activities to be performed till the "Completion of Facilities" shall be to the account of the contractor. The contractor shall be responsible for preference of all claims and make good the damages or loss by way of repairs and/or replacement of plant and equipments damaged or lost. Notwithstanding the extent of insurances cover and the amount of claim available from the underwriter, the contractor shall be liable to make good the full replacement/rectification of all the equipments/materials and to ensure their availability as per project requirement without additional financial liability to the Employer.

The insurance should be in freely convertible currency and insurance policy to be taken should be on replacement value basis and/or incorporating appropriate insurance clause.

The Contractor shall follow local acts and laws as may be prevalent for insurance.

4. Upon grant of extension of time for completion by Employer, the contractor shall promptly furnish documentary evidence to project Manager towards extension of insurance policies for the period of extension.

II) Insurances to be taken by the Employer.

The Employer shall take the insurance for its own employees, its stores and its machinery.

TIME SCHEDULE

- 1.0 It is clearly understood and agreed that time is the essence of this Contract and shall be strictly adhered to by the Contractor. The program of furnishing, erecting, testing, commissioning and completion of facilities identifying the key phases in various areas of work like design, procurement, manufacture, field activities shall be as per detailed PERT Network enclosed as Annexure-I (the detailed PERT Network submitted by the Bidder as per ITB Clause 36 and item no. 9 of Bid Data Sheet and as mutually discussed and agreed before Notification of Award shall be enclosed as Annexure-I to this Appendix-4). As per this detailed PERT Network, the key milestones for completion of facilities are as under:

Major Activity / Milestone Chart for EPC package for Koderma-II (2X800MW)

S. no	Activity/ Description of Milestones	Duration in months from NOA
1.	Completion of dispatches (excl Mandatory Spares) for Unit#1 & common Facilities	38
2.	Completion of dispatches (excl Mandatory Spares) for Unit#2	40
3.	Synchronization of Unit #1	44
4.	Synchronization of Unit #2	48
5.	Full Load of Unit #1	45
6.	Full Load of Unit #2	49
7.	Completion of Trial Operation & PG Test for U#1	46
8.	Completion of Trial Operation & PG Test for U#2	50
9.	Completion of Facilities Unit # 1	48
10.	Completion of Facilities Unit # 2	52

The phase gap between various activities of 2nd Unit shall be 4 (Four) Months except for engineering activities which shall remain same for both units.

The suggestive work schedule is enclosed at **Appendix-II to BDS**.

As Infrastructure works like construction power, lighting, water supply, construction offices, Construction store, Solar PV plant on Roof tops of Buildings, Portable DM Plant for Hydro test etc (as specified in the scope) and SG, TG, ESP, AHP & Chimney civil works etc are included in the scope of contract, it is necessary that the prospective bidders will be required to tie up with sub agency/sources during bidding stage, so that the award for such work is finalized/ placed by the successful bidder in the 1st month on award of Main Plant Package and mobilization of these works take place in 2nd month itself.

Further it is necessary that the successful bidder shall mobilize sufficient number & adequate capacity DG sets at his own cost for providing necessary power requirement till readiness of permanent construction power system, which is in the scope of the bidder.

The contractor shall prepare L2 schedule for the sequence of work of manufacture, supply, construction and erection to meet the above stated dates of successful completion of facilities and shall ensure all work, manufacture, shop testing, inspection and shipment of the equipment in accordance with the required construction/erection sequence and furnish the same along with the Envelope-I (Techno-commercial) Bid.

Detailed (L3) Schedule: The Contractor shall submit detailed L3 schedule to the Project Manager within 45 days from NOA for his review and approval of the same wherein the activities viz supply of Plant & Equipment and services to be provided under the Contract(s) shall be further bifurcated month wise in conformity with month-wise schedule of payment submitted along with their Price Bid for the purpose of identification of Schedule date mentioned in Appendix-2 (Price Adjustment). The detailed L3 Schedule is to be submitted in hard copy as well as soft copy to EIC/DVC Project Manager for approval.

2.0 **Phased Manufacturing Programme (PMP)**

Various Major Milestones for the Phased Manufacturing Programme (PMP) and their Completion Schedule for Steam Generator & Auxiliaries and Steam Turbine Generator & Auxiliaries are as under:

(A) For Steam Generator & Auxiliaries

Sl. No.	Equipment	Indicative Facilities Requirement	To be established latest by (Month from Date of Award)
1.	Pressure Parts (straight water panel wall & spiral water wall)	* Straight tube butt welding facility * Automatic welding facility for processing * NDT facilities * Hydro testing * Continuous heat treatment furnace * Gang/panel bending facility (for straight water wall & spiral water wall tube panels)	36
2.	Pressure Parts (economiser, coils superheater and reheater coils and panels)	* System bend facility * Welding facility for * NDT facilities * Hydro testing * Continuous heat treatment furnace * Jigs & fixtures for assembly and layout checking facility * Portable equipment for material/ grade identification	42
3.	Pressure Parts (headers)	* Welding * Machining & drilling * Heat treatment * Hydraulic testing * NDT facilities * Pressing facility for end caps & tees	42

		* Material identification facility	
		* Facility for high alloy (P5 and above) continuous welding	
4.	Separator (shell and dished ends)	* Rolling facility/pressing facility * Machining & drilling * Welding * Heat treatment * Hydraulic testing * NDT facilities * Pressing arrangements for dished ends	48

(B) For Steam Turbine Generator & Auxiliaries

Sl.No.	Equipment	Indicative Facilities Requirement	To be established latest by (Month from Date of Award)
1.	Turbine Casings and Valves machining	* LP outer Casing fabrication * HP/IP/LP Casing Machining & blading * Heat Treatment/Stress Relieving * Turbine valve machining & assembly testing	36
2.	Turbine Rotor machining	* Rotor machining including grooves & Fir Tree machining * Rotor assembly and balancing * Turbine assembly	42
.	Rotating blades machining	* Rotating Blade machining & finishing	52
4.	Generator Core and stator manufacturing	* Core stamping, fabrication facility * Heat Treatment/Stress Relieving * Generator Stator Fabrication and core building facility * Stator bar manufacturing and heavy machining facility for fabricated Items.	40
5.	Generator Rotor	* Rotor machining including slotting * Rotor assembly and balancing * Exciter manufacturing & testing * Rotor winding facility	42
6.	Generator Assembly	* Generator assembly and testing	48

LIST OF MINIMUM T&P AND SAFETY EQUIPMENTS & SAFETY PERSONAL PROTECTIVE EQUIPMENTS TO BE DEPLOYED BY THE CONTRACTOR

(i) Major T&Ps

A list of minimum no. of Major T&P required to be deployed necessarily by the bidder is furnished below. However, the actual deployment at site shall not be limited to these and additional T&P required to meet the work schedule shall be mobilised by the Contractor

The list of T&P alongwith the Schedule is to be duly filled up by the Bidder to ensure smooth execution of the works at site as per scope of the Contract. (The list of T&P alongwith the schedule of their deployment, as finalised after Notification of Award shall be enclosed here as Annexure-II to APPENDIX-4).

Suggestive List of Major T&Ps for SG & Auxiliaries area

a. To be deployed at site in SG & Auxiliaries area

S.No.	Description of T&P	Quantity (nos.)
1a.	600/750 MT Crane for lifting of structures, Ceiling girders etc. as per the erection strategy.	01
1b.	Strand Jacks for lifting of structures, Ceiling girders, modular preassembled components etc. as per the erection strategy.	01 Sets or more as per site requirement
2.	625/325MT/250MT capacity FMC/Crawler mounted/Tower crane or equivalent	03
3.	Crawler mounted crane or equivalent (150 MT capacity)	02
4.	Crawler mounted crane (100 MT capacity)	03
5.	Crawler mounted crane (75 MT capacity)	03
6.	Hydra cranes/Escorts/Tata P&H 320 or equivalent 18 MT capacity 8 MT capacity	04 08
7.	Passenger cum goods lift	02 per unit
8.	Electro hydraulic pipe bending machine	02
9.	Portable pipe cutting & chamfering machine	02
10.	Welding generator (320 Amp.)	100
11.	Welding Transformers	15
12.	Heat treatment transformers	02
13.	Induction Heating Machines	09
14.	Winches as per site requirement 10 MT 5 MT 3/2/1 MT	02 12 15
15.	Hydro test pumps for Boiler hydraulic test	2 sets
16.	Sky climbers	02
17.	MIG/CO ₂ Welding machine	08
18.	Submerged arc welding machine	02
19.	DC arc welding machine	08

In case the bidder opts for erection strategy of SG by deploying tower cranes and pre-assembly yards, the bidder has to provide schedule and capacity and number of the cranes and related tools and plants for final deliberations and acceptance by DVC.

b. For Material Receipt, Handling & Transportation

S.No.	Description of T&P	Quantity (nos.)
1.	75 MT Crawler crane	02
2.	40 MT mobile crane	01
3.	18/14 MT mobile crane	02
4.	8 MT Hydro crane	02
5.	30/ 40 MT tractor trailer	01
6.	10/ 20 MT tractor trailer	02
7.	40 MT Electric gantry crane	02

Suggestive List of Major T&Ps for TG & Auxiliaries area

a. To be deployed at site in TG & Auxiliaries area

Sl. No.	T&P	Nos. to be deployed
1.	Crawler mounted Crane(75 MT capacity)	01
2.	Crawler mounted Crane(18 MT capacity)	02
3.	Portable stator handling & lifting arrangement	01 set
4.	Hydra crane 8 MT capacity	02
5.	Electric winches • 10 MT • 5 MT • 3 MT/ 2 MT	02 04 12
6.	Special T&P required for Air cooled condenser pre-assembly & modular erection as per erection strategy	As per site requirement
7.	Air winch 1 MT	02
8.	Portable pipe cutting & chamfering machine	01
9.	Pipe bending machine	02
10.	Electric tube expander	02
11.	Pneumatic tube expander	02
12.	Fork lift	01
13.	Portable air compressor	01
14.	Industrial vacuum cleaner	01
15.	Hydraulic test pump (motorized) of HP & LP type	02
16.	Centrifugal oil purifier	02
17.	Welding generator	35
18.	Welding transformers	10
19.	Heat treatment transformers	02
20.	DC Arc welding rectifier	04
21.	Ultrasonic test equipment	01
22.	Radiography test equipment	03
23.	Trailer 30T	01
24.	Truck	03
25.	Electrode oven (big)	01
26.	Electrode ovens (small)	30
27.	MIG/CO2 welding machine	04
28.	Hydraulic jack • 100 MT • 50 MT	02 02
29.	Induction heating machine	03
30.	Any other T&P	

b. For Material Receipt, Handling & Transportation

Sl. No.	T&P	Nos. to be deployed
1.	Crawler mounted Crane(75 MT capacity)	01
2.	Mobile crane (40 MT capacity)	01
3.	Mobile crane (18/14 MT capacity)	02
4.	Hydra crane 8 MT	02
5.	30/40 MT tractor trailer	01
6.	10/20 MT tractor trailer	02

- PS: 1.** The deployment of T&Ps shall be ensured by the agency as per actual requirement to meet the project implementation schedule. Based on the proposed erection strategy of the vendor, the details of T&Ps and their deployment schedule shall be firmed up with the EPC agency during post bid discussion.
- 2.** The suggested tools and plants have been indicated for SG and TG main plant packages. The bidder has to furnish the tools and plant requirements for the off site areas like CHP, AHP, DM plant, switchyard, etc for final acceptance of DVC during pre-award discussions. However for CHP pkg the bidder has to ensure timely availability of 150MT & 250MT crane for completion of the CHP work as per schedule. The exact deployment schedule may be finalized in consultation with DVC site.

SUGGESTED LIST OF PLANT, EQUIPMENT AND MACHINERY REQUIRED TO BE DEPLOYED BY CONTRACTOR AT SITE FOR CIVIL WORK			
Sl. No.	Description	Main Plant and Offsite Civil Works	Chimney & Elevator
1. a)	Pneumatic wagen drills with compressor for controlled blasting	As per requirements	
b)	Portable magazine	As per requirements	
c)	Rock breaker (Hydraulically operated & attached with 2 Cu.M. bucket capacity Excavator)	3 nos.	
2. a)	Crane - 250 MT	1	
b)	Crane - 150 MT	2	
c)	Crane - 80 MT (Tyre mounted)	1	
d)	Crane - 35 MT		1
3.	Crane – 100 MT/75MT	3	
4. a)	Gantry Crane - 40 MT	3	
b)	Gantry Crane - 30 MT		1
c)	Mobile Crane - 20 MT	3	
d)	Mobile Crane - 8 MT	1	
5.	Hydra 12 MT	12	2

6.	Tractor - 50 H.P.	4	As per requirement
a)	Trailers–50 MT capacity	3	As per requirement
b)	Trailers–10 to 15MT capacity	6	As per requirement
8.	Trolley for transporting fabricated material	6	As per requirement
9.	Submerged Arc Automatic Welding Machine (except for fabrication of CW liner, for other structural fabrication, it may be substituted by suitable numbers of MIG Welding)	4	
10.	MIG welding set	60	
11.	Welding transformer	10	10
12.	Welding generator / rectifiers - 400 A to 600 A		
a)	for Structural Steel Works	60	10
b)	for CW liner	4	
13. a)	Pug cutting machine	24	6
b)	Gas cutting machine		4
14. a)	Pillar drill machine - up to 2"	4	1
b)	Radial drill machine		2
15.	Bench grinder	6	2
16.	Hand grinder	24	As per requirement
17.	Flexible grinder	5	
18.	Portable drill machine	6	
19.	Cutting torches	20	As per requirement
20.	Electrical power winches for varying capacities	30	
21.	Chain pulley block - 5 MT to 20 MT	10	
22.	Chain pulley block - 1 MT to 5 MT	6	
23.	Radiographic testing machine	3	
24.	Ultrasonic testing machine	3	
25.	Dye penetration test	As per requirement	
26.	Destructive testing equipment	As per requirement	
27.	Lab equipment	As per	As per
		Part-C	Part-4
		Volume-IA	Volume-IB
28.	Batching plant (with computer printout of quantities)		
a)	30 Cu.M./Hr.	1 Set	1 Set

b) 40 Cu.m./Hr.	2 Set	
29. Concrete mixers		
10/7Cu.M./hr. capacity	4	
30. Transit mixer-minimum	8	4
5.0 Cu.M. capacity		
31. Concrete pump-37 Cu.M/Hr.	4	1
32. Excavator (Poclain and J.C.B.)	3 + 4	
33. Vibrators - Needle type	10	12
34. Vibrators - Float, plate etc.	3	
35. Staging for TG / BFP/ID Fan	1	
- Full set for one unit		
36. Lathe machine	3	
37. De-watering pumps		
(Excluding deepwell dewatering system)		
i) 3 H. P. to 5 H.P.	6	
ii) 10 H.P. to 20 H.P.	6	2
38. Sludge pump	1	
39. High head pump	2	2
40. Dumper / trucks	10	
41. Scaffolding units including	As per	
shuttering plates	requirement	
42. Service compressor with hose	3	
43. Floor cutting and polishing		
machine	3	
44. Speed winches / Hoists	6	5
(for concrete and other		
building material)		
45. Jack hammers/Pavement	3	
Breakers		
46. Scaffolding pipe staging		
including clamps	25 MT	
47. Marble / Tile cutting machine.	4	
48. Vibro compactor/vibro roller /		
double drum vibratory roller		
i) Drum width 500mm	1	
ii) Drum width 750mm	1	
iii) Drum width 900mm	1	
iv) Plate Compactor	4	
49. Truck mounted concrete	2	
pump alongwith mixer/		
alternatively truck mounted		
mixer with placing boom		
of minimum 40M high		
50. Portable hydraulic		
hammer / chisel	1	
51. Concrete coring machine	1	

	for drilling in concrete		
	upto150mm diameter		
	along with diamond bits		
52.	Total workstation for surveying	1	
	including digital theodolite and		
	digital level.		
53.	Painting equipment set	10 sets	
	complete with compressor,		
	hopper, screen, blasting		
	hose pipe, nozzle, airless /		
	conventional Spray etc.		
54.	Plate Bending Machine	2	1
	(25mm x 2500 mm)		
55.	Plasma cutting machine	1	
56.	Concrete paver / spreader	As required	
57.	Concrete sawing machine	1	
	for cutting slit type opening		
	in concrete		
58.	Water tanker	3	
59.	Arrangement of construction	As required	
	water complete with pumps /		
	pipes / water tanker / under-		
	ground tank / overground		
	tank etc.		
60.	Preheating / post weld heat	As required	
	treatment equipment / arrange-		
	ment for welding of structures		
61.	Rebar detector for detecting	1	
	the reinforcement bar position		
	in concrete before creating,		
	in situ opening.		
62.	DG Set 125 KVA	3	1
	(Total capacity of 500kVA of		
	generation capacity to be deployed		
	from 4 or more number of DG Sets)		
63.	Plate straightening machine		
	(i) 20 X 2500 MM	1	
64.	Chipping Hammer	2	
65.	Punching Machine	4 Sets	
	(Minimum Letter size 20 mm)		
66.	Bar Bending and Cutting Machine	4	
67.	Bull dozer	As required	
68.	Road Paver & Finisher	As required	
69.	Roller (10 Tonne Capacity)	2	
70.	Sheep Foot Roller	1	
71.	Slipform Shuttering equipment		1

72.	Chimney Raft Shuttering materials	1100 (Sq.M)
73.	Verticality Measuring Plumb	As required
74.	Verticality Measuring Laser System	2
75.	HT Wire	As required
76.	Well point dewatering system	As per requirement
77.	Misc. Tools & Tackles	As Required
78.	Builder Tower Hoist	4
79.	Concrete boom placer	2
80.	Collapsible mobile shed for outdoor welding work.	As required
81.	Concrete pavement cutters	
	With wet diamond saw cutter	
	For cutting pavement of Thickness up to 300mm	As required

NOTES :

- a) These requirements and capacity of the equipment are indicative only and not exhaustive and deployment of the equipment, machinery and labour shall be suitably augmented to achieve the timely completion of the work as per the program and directions of the engineer-in-charge, without any additional cost to Owner. Deployment schedule of major equipment to be mentioned in L2 Program
- b) Other materials like cables, sling, gloves, goggles, safety belts, safety helmets, heating oven, pre-heating / post weld heat treatment arrangement, material for making platform and platform support etc. shall be mobilised as per requirement.
- c) Other equipment though required for the timely completion of the job but not listed above shall be deployed by the contractor, as per the job requirements and as directed by the Engineer.
- d) The contractor shall make suitable provisions for repairs and maintenance of the equipment mobilised and always keep them in good working conditions, as the repair facilities for such equipment are not available at the project site.
- e) A minimum stock of 15 days of gas and 30 days of electrode shall be maintained at the site.
- f) A minimum stock of aggregate & sand of two weeks shall be maintained at site.
- g) All cranes shall be crawler mounted.
- h) The bidder shall be required to furnish along with document the deployment of tools & equipment correlating with the monthly output / productivity. This shall be finalized during pre-award discussion.
- i) For all columns & sub-structure beams of TG foundation, sets of formwork for all columns & beams of each level are to be deployed so that all the columns and beams at each level can be cast simultaneously.

(ii) Safety Equipments & Safety Personal Protective Equipments

The list of minimum suggestive Safety Equipments & Safety Personal Protective Equipments to be deployed necessarily by the bidder is furnished below. However, the actual deployment at site shall not be limited to these and additional equipments if required shall be mobilised by the Contractor.

Sl. No.	Minimum Suggested List of Safety Equipments and Safety Personal Protective Equipments	Minimum Quantity
1.	Safety Net (Conforming IS 11057:1984) Safety Net (Net Size: 10m x 5m, Mesh Size: 25 mm, Mesh Rope: 2mm double cord, Border/Tie Cord: 12mm diameter polypropylene rope (tested as per IS: 5175).Two metres length shall be provided at all four corners.	240 Nos.
2.	Fall Arrester 'Rope grab fall arrester' & anchorage line. Anchorage Line: 14mm- 16 mm diameter, three strand twisted Polyamide rope. Rope Grab fall arrester: Openable & Guided type Fall Arrestor (on flexible line) conforming EN 353-2 & works on 14-16 mm diameter polyamide rope. material: Nickel Chrome plated Steel Connector: Karbiner conforming to EN 362 (Minimum Strength 22 KN), material: Steel	200 nos. of Rope Grab Fall arrester' and Karbiner each. 90 nos. anchorage line, 30 metre long each, 30 nos. anchorage line, 40 metre long each
3.	Horizontal life line Stainless Steel Wire rope of 8mm diameter. Minimum six nos. of steel U-bolt clips are required for clamping each wire rope to a rigid support (03 nos. of U-bolt clips at each end).	40 nos. of wire rope, each 40 metre long 90 nos. of wire rope, each 25 metre long.
4.	Ladders on column The minimum design live load on metallic ladder shall be a single concentrated load of 100 kilo grams. All rungs shall have a minimum diameter of 1.90 centimeters, and minimum clear length of rungs shall be 40.6 centimeters. The distance between rungs shall not exceed 30.5 centimeters. Each ladder shall have maximum height of 9.0 metre. The ladder shall have proper fastenings for attaching it to a column using positive means such as bolt, weld or other type of fasteners.	cumulative length of ladders is 1200 metres
5.	Safety PPEs (Industrial Safety helmet & Industrial Safety Shoes) Industrial Safety Helmet (IS:2925-1984 marked). Industrial Safety/Electrical Shoes (IS:15298-2002 marked). Full body Safety Harness (conforming IS:3521)	1575 nos. 1575 nos. 395 nos

Note: 1. Safety PPEs include Industrial Safety Helmet and Industrial Safety Shoes.

ANNEXURE - I TO APPENDIX - 4

MASTER NETWORK

The Master Network as per para 1.0 of Appendix-4
shall be enclosed as Annexure-I to Appendix-4

LIST OF SUB-CONTRACTORS

PART 1. **Nominated Sub-Contractors**

In the event that the employer wishes to nominate any particular Sub-Contractors for the undertaking of any part or parts of the Works, these shall be identified and named by the Employer in the following schedule prior to the issue of the Bidding Documents.

Full details shall be given of the part of the Works to be executed, and the names and addresses of the Sub-Contractors to whom the part of the Works is to be sub-contracted by the Bidder. Where more than one name is given for any part of the Work, the Bidder shall be free to select any of the named Sub-Contractors for that part.

Item of Work	Nominated Sub-Contractor

NIL

PART 2 **Approved Sub-Contractors**

The following Sub-Contractors are approved for carrying out the item of work indicated. Where more than one Sub-contractor is listed, the Contractor is free to choose between them but he must notify the Employer of his choice in good time prior to appointing any selected Sub-Contractor. In accordance with Clause GCC 19.1, the Contractor is free to submit proposals for additional Sub- Contractors from time to time. No Sub-Contracts shall be placed with any such additional Sub-Contractors until they have been approved in writing by the Employer and their names added to this list of Approved Sub-Contractors.

Item of Work	Approved Sub-Contractors	Nationality

SCOPE OF WORKS AND SUPPLY BY THE EMPLOYER

All facilities, works, supplies and personnel to be provided by the Employer shall be as described in Technical Specifications and the same will be provided by the Employer in good time so as not to delay the performance of the Contractor, in accordance with the approved Time Schedule and Programme of Performance pursuant to GCC Sub-Clause 18.2.

LIST OF DOCUMENTS FOR REVIEW AND APPROVAL

A. Approval

- 1.
- 2.
- 3.

B. Review

- 1.
- 2.
- 3.

Note : This list of documents required for approval/review by the Employer shall be as per Attachment 10 to Bid Form, Section VII of bidding document and as finalised during the contract stage.

FUNCTIONAL GUARANTEES

The Functional Guarantees shall be as per Part-A of Section-VI (Technical Specifications). The contents of this Appendix shall, however, be finalised at the time of award of Contract.

6. PERFORMANCE SECURITY FORM

6. Performance Security Form

(To be stamped in accordance with Stamp Act
if any, of the Country of the Issuing Bank)

Bank Guarantee No.....
Date.....

To,

[Employer's Name & Address]

Dear Sirs,

In consideration of the*[Employer's Name]*..... (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) having awarded to M/s*[Contractor's Name]*..... with its Registered /Head Office at (hereinafter referred to as the 'Contractor', which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), a Contract by issue of Employer's Notification of Award No. dated..... and the same having been unequivocally accepted by the contractor, resulting into a Contract bearing No..... dated valued at for and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to(*).....% (..... percent) of the said value of the Contract to the Employer.

We*[Name & Address of the Bank]*.....having its Head Office at.....(hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer, on demand any and all monies payable by the Contractor to the extent of(*)..... as aforesaid at any time upto(@)..... *[days/month/year]* without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Employer on the Bank shall be conclusive and binding notwithstanding any difference between the Employer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Employer and further agrees that the guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Bank under this guarantee, from time to time to extend the time for performance of the Contract by the Contractor. The Employer shall have the fullest liberty, without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Contractor or any other course or remedy or security available to the Employer. The Bank shall not be released of its obligations under these presents by any exercise by the Employer of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of

the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Bank.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

Notwithstanding anything contained hereinabove our liability under this guarantee is restricted to(*)..... and it shall remain in force upto and including(@)..... and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s[Contractor's Name]..... on whose behalf this guarantee has been given.

Dated this day of 20..... at.....

(Signature).....

(Name).....

.....

(Designation with Bank Stamp)

Attorney as per Power

of Attorney No.....

Dated.....

Notes :1. (*) This sum shall be ten percent (10%) of the Contract Price.

(@) This date will be ninety (90) days beyond the Defects liability period as specified in the Contract.

2. The Bank Guarantee shall be from a Bank as per provisions of the Bidding Documents.
3. The BG should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the state(s) where the BG is submitted or is to be acted upon or the rate prevailing in State where the BG is executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Bidder/Bank issuing the guarantee.
4. While getting the Bank Guarantee issued, the Contractor is required to ensure compliance to the points mentioned in Form of Bank Guarantee Verification Check List. Further, the Contractor is required to fill up this Form and enclose the same with the Bank Guarantee.

**6(a) Performance Security Form regarding Phased Manufacturing Program
(To be furnished separately for Steam Generator Sets
and Steam Turbine Generator Sets)**

(To be stamped in accordance with Stamp Act
if any, of the Country of the Issuing Bank)

Bank Guarantee No.....
Date.....

To,
[Employer's Name & Address]

Dear Sirs,

In consideration of the[Employer's Name]..... (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) having awarded to M/s[Contractor's Name]..... with its Registered /Head Office at (hereinafter referred to as the 'Contractor', which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), a Contract by issue of Employer's Notification of Award No. dated..... and the same having been unequivocally accepted by the contractor, resulting into a Contract bearing No..... dated valued at for and the Contractor having agreed to provide a Performance Guarantee for the faithful Completion of Phased Manufacturing Program for an amount equivalent to* to the Employer.

We[Name & Address of the Bank].....having its Head Office at.....(hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer, on demand any and all monies payable by the Contractor to the extent of* as aforesaid at any time upto(@)..... [days/month/year] without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Employer on the Bank shall be conclusive and binding notwithstanding any difference between the Employer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this Guarantee during its currency without previous consent of the Employer and further agrees that the Guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Bank under this Guarantee, from time to time to extend the time for performance of the Contract by the Contractor. The Employer shall have the fullest liberty, without affecting this Guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Contractor or any other course or remedy or security available to the Employer. The Bank shall not be released of its obligations under these presents by any exercise by the Employer of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the

Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Bank. The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

Notwithstanding anything contained hereinabove our liability under this Guarantee is restricted to(*)..... and it shall remain in force upto and including(@)..... and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s[Contractor's Name]..... on whose behalf this Guarantee has been given.

Dated this day of 20..... at.....

(Signature).....

(Name).....

.....

(Designation with Bank Stamp)

Attorney as per Power

of Attorney No.....

Dated.....

Notes:1. (*) Value shall be as specified in Section-V (SCC) separately for Steam Generator Sets and Steam Turbine Generator Sets

(@) Upto 90 days beyond the Schedule date of Completion of PMP.

2. The Bank Guarantee shall be from a Bank as per provisions of Section-V (SCC) of the Bidding Documents.
3. The stamp papers of appropriate value shall be purchased in the name of guarantee issuing Bank or the party on whose behalf for BG is being issued. The Bank Guarantee shall be issued on a stamp paper of value as per Stamp Act prevailing in the State of India from where Bank Guarantee is issued or the State of India from where BG shall be operated, whichever is higher.
4. While getting the Bank Guarantee issued, the contractor is required to ensure compliance to the points mentioned in Form 15 - Form of Bank Guarantee Verification Check List. Further, the Contractor is required to fill up this Form 15 and enclose the same with the Bank Guarantee.

Form 6b. Insurance Surety Bond towards Performance Security

(To be stamped in accordance with Stamp Act of India)

Insurance Surety Bond No.

Date.....

To,

[Employer's Name & Address]

Dear Sirs,

In consideration of the *[Employer's Name]* (Hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) having awarded to M/s..... *[Contractor's Name]*..... with its Registered /Head Office at (Hereinafter referred to as the 'Contractor', which expression shall unless repugnant to the context or meaning thereof, include its successors administrators, executors and assigns), a Contract by issue of Employer's Notification of Award No. dated..... and the same having been unequivocally accepted by the contractor, resulting into a Contract bearing No..... dated, valued at for and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to(*).....%(..... percent) of the said value of the Contract to the Employer.

We*[Name & Address of the Insurer]*.....having its Head Office at(hereinafter referred to as the 'Insurer', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer, on demand any and all amount payable by the Contractor to the extent of(*)..... as aforesaid at any time up to(@)..... *[days/month/year]* without any condition, demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Employer on the Insurer shall be conclusive and binding notwithstanding any difference between the Employer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Insurer undertakes not to revoke this Insurance Surety Bond during its currency and or any period extended under the contract, without prior consent of the Employer and further agrees that the guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Insurer under this Insurance Surety Bond, from time to time to extend the performance of the Contract by the Contractor for the purpose of which, the Insurer shall be liable to extend the validity of the present Insurance Surety Bond without any demur, condition, protest and the Insurer shall at no point in time have an option of revoking the same, The Employer shall have the fullest liberty, without affecting this Insurance Surety Bond, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Contractor or any other course or remedy or security available to the Employer. The Insurer shall not be released of its obligations under these presents by any exercise by the Employer of its liberty with reference to the aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Insurer.

The Insurer also agrees and undertakes that the Employer at its option shall be entitled to enforce this Insurance Surety Bond against the Insurer as a Surety, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

Notwithstanding anything contained hereinabove our liability under this Insurance Surety Bond is restricted to(*)..... and it shall remain in force upto and including

.....(@)..... and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s[Contractor's Name]..... on whose behalf this Insurance Surety Bond has been given.

Dated this day of 20..... at.....

WITNESS :

1..... (Signature) (Name) (Official Address)	 (Signature) (Name) (Designation with Insurer Stamp)

Authorised Vide Power of
Attorney No.....
Date.....

2.
(Signature)
.....
(Name)
.....
(Official Address)

Notes : 1. (*) This sum shall be as defined in the Bidding Documents.

(@) This date will be ninety (90) days beyond the Defect liability period as specified in the Contract.

2. The Insurance Surety Bond shall be from an Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI).

3. The Employer shall be the Creditor, the Contractor shall be the Principal debtor and the Insurance company/Insurer shall be the Surety in respect of the Insurance Surety Bond to be issued by the Insurer.

4. The Insurance Surety Bond should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the state(s) where the Insurance Surety Bond is submitted or is to be acted upon or the rate prevailing in State where the Insurance Surety Bond is executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Bidder/Insurer issuing the Insurance Surety Bond.

5. While getting the Insurance Surety Bond issued, the Contractor is required to ensure compliance to the points mentioned in Form of Bank Guarantee/ Insurance Surety Bond Verification Check List. Further, the Contractor is required to fill up this Form and enclose the same with the Insurance Surety Bond.

6(c) Insurance Surety Bond regarding Phased Manufacturing Program

(To be stamped in accordance with Stamp Act of India)

Insurance Surety Bond No.

Date.....

To,
[Employer's Name & Address]

Dear Sirs,

In consideration of the [Employer's Name] (Hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) having awarded to M/s..... [Contractor's Name]..... with its Registered /Head Office at (Hereinafter referred to as the 'Contractor', which expression shall unless repugnant to the context or meaning thereof, include its successors administrators, executors and assigns), a Contract by issue of Employer's Notification of Award No. dated..... and the same having been unequivocally accepted by the contractor, resulting into a Contract bearing No..... dated, valued at for and the Contractor having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to(*).....% (..... percent) of the said value of the Contract to the Employer.

We[Name & Address of the Insurer].....having its Head Office at(hereinafter referred to as the 'Insurer', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer, on demand any and all amount payable by the Contractor to the extent of(*)..... as aforesaid at any time up to(@)..... [days/month/year] without any condition, demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Employer on the Insurer shall be conclusive and binding notwithstanding any difference between the Employer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Insurer undertakes not to revoke this Insurance Surety Bond during its currency and or any period extended under the contract, without prior consent of the Employer and further agrees that the guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Insurer under this Insurance Surety Bond, from time to time to extend the performance of the Contract by the Contractor for the purpose of which, the Insurer shall be liable to extend the validity of the present Insurance Surety Bond without any demur, condition, protest and the Insurer shall at no point in time have an option of revoking the same, The Employer shall have the fullest liberty, without affecting this Insurance Surety Bond, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Contractor or any other course or remedy or security available to the Employer. The Insurer shall not be released of its obligations under these presents by any exercise by the Employer of its liberty with reference to the aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the Insurer.

The Insurer also agrees and undertakes that the Employer at its option shall be entitled to enforce this Insurance Surety Bond against the Insurer as a Surety, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

Notwithstanding anything contained hereinabove our liability under this Insurance Surety Bond is restricted to(*)..... and it shall remain in force upto and including(@)..... and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s[Contractor's Name]..... on whose behalf this Insurance Surety Bond has been given.

Dated this day of 20..... at.....

WITNESS :

1..... (Signature) (Name) (Official Address)	 (Signature) (Name) (Designation with Insurer Stamp)

Authorised Vide Power of
Attorney No.....
Date.....

2.
(Signature)
.....
(Name)
.....
(Official Address)

- Notes :** 1. (*) Value shall be as specified in Section-V (SCC for Steam Generator Sets
(@) This date will be ninety (90) days beyond the Defect liability period as specified in the Contract.
2. The Insurance Surety Bond shall be from an Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI).
3. The Employer shall be the Creditor, the Contractor shall be the Principal debtor and the Insurance company/Insurer shall be the Surety in respect of the Insurance Surety Bond to be issued by the Insurer.
4. The Insurance Surety Bond should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the state(s) where the Insurance Surety Bond is submitted or is to be acted upon or the rate prevailing in State where the Insurance Surety Bond is executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Bidder/Insurer issuing the Insurance Surety Bond.
5. While getting the Insurance Surety Bond issued, the Contractor is required to ensure compliance to the points mentioned in Form of Bank Guarantee/ Insurance Surety Bond Verification Check List. Further, the Contractor is required to fill up this Form and enclose the same with the Insurance Surety Bond.

**7. BANK GUARANTEE FORM
FOR ADVANCE PAYMENT**

7(i). Bank Guarantee Form for Advance Payment (Supply-FOB/Ex-Works)

(To be stamped in accordance with Stamp Act
if any, of the Country of the Issuing Bank)

Bank Guarantee No.....

Date.....

To,
[Employer's Name & Address]

Dear Sir,

In consideration of[Employer's Name]..... (hereinafter referred to as the 'Employer', which expression shall, unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s.....[Contractor's Name]..... with its Registered/Head Office at (hereinafter referred to as the 'Contractor' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), a Contract, by issue of Employer's Notification of Award No. dated and the same having been unequivocally accepted by the Contractor, resulting into a Contract bearing No. dated..... valued at for[Name of Contract](hereinafter called the 'Contract') and the Employer having agreed to make an advance payment to the Contractor for performance of the above Contract amounting (in words and figures) as an Advance against Bank Guarantee to be furnished by the Contractor.

We.....[Name and address of the Bank]..... having its Head Office at (hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer, immediately on demand any or, all monies payable by the Contractor to the extent of[advance amount]..... as aforesaid at any time upto(@)..... without any demur, reservation, contest, recourse or protest and/ or without any reference to the Contractor. Any such demand made by the Employer on the Bank shall be conclusive and binding notwithstanding any difference between the Employer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Employer and further agrees that the guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

The Employer shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee, from time to time to vary the advance or to extend the time for performance of the Contract by the Contractor. The Employer shall have the fullest liberty without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Contractor or any other

course or remedy or security available to the Employer. The Bank shall not be released of its obligations under these presents by any exercise by the Employer of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would but for this provision, have the effect of relieving the Bank.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

Notwithstanding anything contained hereinabove our liability under this guarantee is limited to[advance amount]..... and it shall remain in force upto and including(@)..... and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s.....[Contractor's Name]..... on whose behalf this guarantee has been given.

Dated this day of 20 at

(Signature).....
(Name).....
(Designation with Bank Stamp)

Attorney as per Power
of Attorney No.....
Dated.....

- Notes:** 1. (@) This date shall be ninety (90) days beyond the date of Completion of the last Facilities covered under the package.
2. The stamp papers of appropriate value shall be purchased in the name of guarantee issuing Bank or the Party on whose behalf for BG is being issued. The Bank Guarantee shall be issued on a stamp paper of value as per Stamp act prevailing in the State of India from where Bank Guarantee is issued or the State of India from where the BG shall be operated, whichever is higher.
3. While getting the Bank Guarantee issued, the contractor is required to ensure compliance to the points mentioned in Form 15 - Form of Bank Guarantee Verification Check List. Further, the Contractor is required to fill up this Form 15 and enclose the same with the Bank Guarantee.
4. The Bank Guarantee shall be from a Bank as per provision of Section-V (SCC) of the Bidding Documents.

7.(ii) Bank Guarantee Form for Advance Payment

(For Installation Services/Civil Works/Structural Works)

(To be stamped in accordance with Stamp Act
if any, of the Country of the issuing Bank)

Bank Guarantee No.....

Date.....

To,
[Employer's Name & Address]

Dear Sir,

In consideration of[Employer's Name]..... (hereinafter referred to as the 'Employer', which expression shall, unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s.....[Contractor's Name]..... with its Registered/Head Office at (hereinafter referred to as the 'Contractor' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), a Contract, by issue of Employer's Notification of Award No. dated and the same having been unequivocally accepted by the Contractor, resulting into a Contract bearing No. dated..... valued at for[Name of Contract](hereinafter called the 'Contract') and the Employer having agreed to make an interest bearing advance ('said Advance') to the Contractor amounting to (in words and figures).... in terms of the said Contract for performance of the above Contract against Bank Guarantee to be furnished by the Contractor.

We.....[Name and address of the Bank]..... having its Head Office at (hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the Employer, immediately on demand any or, all monies payable by the Contractor to the extent of[110% of advance amount]..... as aforesaid along with interest @% **per annum** on the Advance amount references of the Employer calculated from the date of release of the said advance by the Employer to the Contractor, at any time upto(#)..... without any demur, reservation, contest, recourse or protest and/ or without any reference to the Contractor. Any such demand made by the Employer on the Bank shall be conclusive and binding as to the amount and interest claimed by the Employer under this guarantee notwithstanding any difference between the Employer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Employer and further agrees that the guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

The Employer shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee, from time to time to vary the advance or to extend the time for performance of the Contract by the Contractor. The Employer shall have the fullest liberty without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Employer and the Contractor or any other

course or remedy or security available to the Employer. The Bank shall not be released of its obligations under these presents by any exercise by the Employer of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would but for this provision, have the effect of relieving the Bank.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

Notwithstanding anything contained hereinabove our liability under this guarantee is limited to[110% advance amount]..... along with interest thereon as aforesaid and it shall remain in force up to and including(#)..... and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s..... [Contractor's Name]..... on whose behalf this guarantee has been given.

Dated this day of 20 at

(Signature).....

(Name).....

(Designation with Bank Stamp)

Attorney as per Power
of Attorney No.....

Dated.....

- Notes:**
1. (#) This date shall be ninety (90) days beyond the date of Completion of the last Facility covered under the package.
(@) The rate of interest shall be "SBI 1-year MCLR as on 01st April of applicable year + 150 bps" per annum. The applicable rate (SBI year MCLR + 150 bps per annum) would be notified by Employer annually for each year.
 2. The Bank Guarantee shall be from a Bank as per provisions of Section-V (SCC) of the Bidding Documents.
 3. The stamp papers of appropriate value shall be purchased in the name of guarantee issuing Bank or the Party on whose behalf for BG is being issued. The Bank Guarantee shall be issued on a stamp paper of value as per Stamp act prevailing in the State of India from where Bank Guarantee is issued or the State of India from where the BG shall be operated, whichever is higher.
 4. While getting the Bank Guarantee issued, the contractor is required to ensure compliance to the points mentioned in Form 15 - Form of Bank Guarantee Verification Check List. Further, the Contractor is required to fill up this Form 15 and

8. FORM OF COMPLETION CERTIFICATE

8. Form of Completion Certificate

Date:

Contract Ref.No.....

[Name of Contract]

To: [Name and address of Contractor]

Dear Sirs,

Pursuant to GCC Clause 24 (Completion of the Facilities) of the General Conditions of the Contract entered into between yourselves and the Employer dated [date], relating to the [brief description of the facilities], we hereby notify you that the following part(s) of the Facilities was (were) complete on the date specified below, and that, in accordance with the terms of the Contract, the Employer hereby takes over the said part(s) of the Facilities, together with the responsibility for care and custody and the risk of loss thereof on the date mentioned below.

1. Description of the Facilities or part thereof: [description]
2. Date of Completion: [date]

However, you are required to complete the outstanding items listed in the attachment hereto as soon as practicable.

This letter does not relieve you of your obligation to complete the execution of the Facilities including Guarantee Test(s) in accordance with the Contract nor of your obligations during the Defects Liability Period.

Very truly yours,

9. FORM OF OPERATIONAL ACCEPTANCE CERTIFICATE

9. Form of Operational Acceptance Certificate

Date:

Contract Ref. No.

[Name of Contract]

To: *[Name and address of Contractor]*

Dear Sirs,

Pursuant to GCC Sub-Clause 25.3 (Operational Acceptance) of the General Conditions of the Contract entered into between yourselves and the Employer dated *[date]*, relating to the *[brief description of the facilities]*, we hereby notify you that the Functional Guarantees of the following part(s) of the Facilities were satisfactorily attained on the date specified below.

1. Description of the Facilities or part thereof: *[description]*
2. Date of Operational Acceptance: *[date]*

This letter does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defects Liability Period.

Very truly yours,

Title
(Project Manager)

10. FORM OF TRUST RECEIPT

**10. FORM OF TRUST RECEIPT FOR PLANT,
EQUIPMENT AND MATERIALS RECEIVED**

We M/s *(Contractor's Name)*..... having our
Principal place of business at having been awarded a Contract
No..... dated for *(Contract Name)*..... by
(Name of Employer)

We do hereby acknowledge the receipt of the Plant, Equipment and Materials as are fully described and mentioned under Documents of Title/RR/LR etc. and in the schedule annexed hereto, which shall form an integral part of this receipt as "Trustee" of *(Name of Employer)*. The aforesaid materials etc. so received by us shall be exclusively used in the successful performance of the aforesaid Contract and for no other purpose whatsoever. We undertake not to create any charge, lien or encumbrance over the aforesaid materials etc, in favour of any other person/institution(s)/Banks.

For M/s
(Contractor's Name)

Dated :

(AUTHORISED SIGNATORY)

**11. FORM OF INDEMNITY-CUM-UNDERTAKING
AGREEMENT**

**11a. FORM OF INDEMNITY-CUM-UNDERTAKING AGREEMENT
FOR THE EQUIPMENTS
HANDED OVER BY THE EMPLOYER
FOR PERFORMANCE OF CONTRACT
(Entire Equipment Consignment in one lot)**

(On Non-Judicial Stamp Paper of appropriate value)

INDEMNITY-CUM-UNDERTAKING AGREEMENT

THIS INDEMNITY-CUM-UNDERTAKING AGREEMENT is made this day of..... 20 by(Contractor's Name) a Company registered under the Companies Act, 1956/Partnership Firm/Proprietary Concern having its Registered Office at (hereinafter called as 'Contractor' or "Obligor" which expression shall include its successors and permitted assigns) in favour of (Name of Employer), a corporation incorporated under the laws of India and having its head office at DVC Towers, VIP Road, Kolkata- 700054 India and its project at (hereinafter called "....."..*{Abbreviated name of the Employer}*..) which expression shall include its successors and assigns) :

WHEREAS@..... has awarded to the Contractor a Contract for vide its Notification of Award/Contract No.....dated and its Amendment No. and Amendment No....., (*applicable when amendments have been issued*) (hereinafter called the "Contract") in terms of which@..... is required to hand over various Equipments to the Contractor for execution of the Contract.

And WHEREAS by virtue of Clause No..... of the said Contract, the Contractor is required to execute an INDEMNITY-CUM-UNDERTAKING AGREEMENT in favour of.....@..... for the Equipments handed over to it by@..... for the purpose of performance of the Contract/Erection Portion of the Contract (hereinafter called the "Equipments")

AND THEREFORE, This INDEMNITY-CUM-UNDERTAKING AGREEMENT witnesseth as follows:

1. That in consideration of various Equipments as mentioned in the Contract, valued at (*Currency and amount in Figures*)..... (*Currency and amount in words*) handed over to the Contractor for the purpose of performance of the Contract, the Contractor hereby undertakes to indemnify and shall keep@..... indemnified, for the full value of the Equipments. The Contractor hereby acknowledges actual receipt of the Equipments, etc. as per despatch title documents handed over to the Contractor as detailed in the Schedule appended hereto. The Contractor shall hold such Equipments, etc. in trust as a "Trustee" for and on behalf of@..... .

@ Fill in abbreviated name of Employer.

2. That the Contractor is obliged and shall remain absolutely responsible for the safe transit/protection and custody of the Equipments at@..... project site against all risks whatsoever till the Equipments are duly used/erected in accordance with the terms of the Contract and the plant/package duly erected and commissioned in accordance with the terms of the Contract is taken over by@..... . The Contractor undertakes to keep@..... harmless against any loss or damage that may be caused to the Equipments.
3. The Contractor undertakes that the Equipments shall be used exclusively for the performance/execution of the Contract strictly in accordance with its terms and conditions and no part of the Equipments shall be utilised for any other work or purpose whatsoever. It is clearly understood by the Contractor that non-observance of the obligations under this INDEMNITY-CUM-UNDERTAKING AGREEMENT by the Contractor shall inter-alia constitute a criminal breach of trust on the part of the Contractor for all intents and purpose including legal/penal consequences.
4. That@..... is and shall remain the exclusive owner of the Equipments free from all encumbrances, charges or liens of any kind, whatsoever. The Equipments shall at all times be open to inspection and checking by the Project Manager or other employees/agents authorised by him in this regard. Further, ...@..... shall always be free at all times to take possession of the Equipments in whatever form the Equipments may be, if in its opinion, the Equipments are likely to be endangered, misutilised or converted to uses other than those specified in the Contract, by any acts of omission or commission on the part of the Contractor or any other person or on account of any reason whatsoever and the Contractor binds himself and undertakes to comply with the directions of demand of@..... to return the Equipments without any demur or reservation.
5. That this INDEMNITY-CUM-UNDERTAKING AGREEMENT is irrevocable. If at any time any loss or damage occurs to the Equipments or the same or any part thereof is mis-utilised in any manner whatsoever, then the Contractor hereby agrees that the decision of the Project Manager of@..... as to assessment of loss or damage to the Equipments shall be final and binding on the Contractor. The Contractor binds itself and undertakes to replace the lost and/or damaged Equipments at its own cost and/or shall pay the amount of loss to@..... without any demur, reservation or protest. This is without prejudice to any other right or remedy that may be available to@..... against the Contractor under the Contract and under this INDEMNITY-CUM- UNDERTAKING AGREEMENT.
6. NOW THE CONDITION of this Bond is that if the Contractor shall duly and punctually comply with the terms and conditions of this Bond to the satisfaction of@....., THEN, the above Bond shall be void, but otherwise, it shall remain in full force and virtue.

@ Fill in abbreviated name of Employer.

IN WITNESS WHEREOF, the Contractor has hereunto set its hand through its authorised representative under the common seal of the Company, the day, month and year first above mentioned.

SCHEDULE

Particulars of the Equipments handed over	Quantity	Particulars of Despatch Title Documents	Value of the Equip- ments	Signature of Attorney in token of receipt
		RR/GR/Bill of Lading No & Date	Carrier	

For and on behalf of

.....
(Contractor's Name)

WITNESS :

1.	1.	Signature	Signature
	2.	Name	Name
	3.	Address	Designation of Authorised representative *
2.	1.	Signature	(Common Seal)
	2.	Name	(In case of Company)
	3.	Address	

* INDEMNITY-CUM-UNDERTAKING AGREEMENT are to be executed by the authorised person and (i) in case of contracting Company under common seal of the Company or (ii) having the Power of Attorney issued under common seal of the company with authority to execute INDEMNITY-CUM-UNDERTAKING AGREEMENT, (iii) In case of (ii), the original Power of Attorney if it is specifically for this Contract or a photostat copy of the Power of Attorney if it is General Power of Attorney and such documents should be attached to INDEMNITY-CUM-UNDERTAKING AGREEMENT.

**11b. FORM OF INDEMNITY-CUM-UNDERTAKING AGREEMENT TO BE EXECUTED
BY THE CONTRACTOR FOR THE EQUIPMENTS
HANDED OVER IN INSTALMENTS BY THE
EMPLOYER FOR PERFORMANCE OF ITS CONTRACT**

(On Non-Judical Stamp Paper of appropriate value)

INDEMNITY-CUM-UNDERTAKING AGREEMENT

THIS INDEMNITY-CUM-UNDERTAKING AGREEMENT is made this day of..... 20 by(Contractor's Name) a Company registered under the Companies Act, 1956/Partnership Firm/Proprietary Concern having its Registered Office at (hereinafter called as 'Contractor' or "Obligor" which expression shall include its successors and permitted assigns) in favour of(Name of Employer), a Company incorporated under the Companies Act, 1956 having its Registered Office at and its project at (hereinafter called "....."{Abbreviated name of the Employer}") which expression shall include its successors and assigns) :

WHEREAS@..... has awarded to the Contractor a Contract for vide its Notification of Award/Contract No.....dated and its Amendment No. and Amendment No....., (applicable when amendments have been issued) (hereinafter called the "Contract") in terms of which@..... is required to hand over various Equipments to the Contractor for execution of the Contract.

And WHEREAS by virtue of Clause No..... of the said Contract, the Contractor is required to execute an INDEMNITY-CUM-UNDERTAKING AGREEMENT in favour in@..... for the Equipments handed over to it by@..... for the purpose of performance of the Contract/Erection Portion of the Contract (hereinafter called the "Equipments")

NOW THEREFORE, This INDEMNITY-CUM-UNDERTAKING AGREEMENT witnesseth as follows :

1. That in consideration of various Equipments as mentioned in the Contract, valued at (Currency and amount in figures)..... (Currency and amount in words) to be handed over to the Contractor in instalments from time to time for the purpose of performance of the Contract, the Contractor hereby undertakes to indemnify and shall keep@..... indemnified, for the full value of the Equipments. The Contractor hereby acknowledges actual receipt of the initial instalment of the Equipments, etc. as per details in the Schedule appended hereto. Further, the Contractor agrees to acknowledge actual receipt of the subsequent instalments of the Equipments, etc. as required by@..... in the form of Schedules consecutively numbered which shall be attached to this INDEMNITY-CUM- UNDERTAKING AGREEMENT so as to form integral parts of this Bond. The Contractor shall hold such Equipments, etc. in trust as a "Trustee" for and on behalf of@.....

@ Fill in abbreviated name of Employer.

2. That the Contractor is obliged and shall remain absolutely responsible for the safe transit/protection and custody of the Equipments at@..... project site against all risks whatsoever till the Equipments are duly used/erected in accordance with the terms of the Contract and the plant/package duly erected and commissioned in accordance with the terms of the Contract, is taken over by@..... . The Contractor undertakes to keep@..... harmless against any loss or damage that may be caused to the Equipments.
3. The Contractor undertakes that the Equipments shall be used exclusively for the performance/execution of the Contract strictly in accordance with its terms and conditions and no part of the Equipments shall be utilised for any other work or purpose whatsoever. It is clearly understood by the Contractor that non-observance of the obligations under this INDEMNITY-CUM-UNDERTAKING AGREEMENT by the Contractor shall inter-alia constitute a criminal breach of trust on the part of the Contractor for all intents and purpose including legal/penal consequences.
4. That@..... is and shall remain the exclusive owner of the Equipments free from all encumbrances, charges or liens of any kind, whatsoever. The Equipments shall at all times be open to inspection and checking by the Project Manager or other employees/agents authorised by him in this regard. Further, ...@..... shall always be free at all times to take possession of the Equipments in whatever form the Equipments may be, if in its opinion, the Equipments are likely to be endangered, misutilised or converted to uses other than those specified in the Contract, by any acts of omission or commission on the part of the Contractor or any other person or on account of any reason whatsoever and the Contractor binds himself and undertakes to comply with the directions of demand of@..... to return the Equipments without any demur or reservation.
5. That this INDEMNITY-CUM-UNDERTAKING AGREEMENT is irrevocable. If at any time any loss or damage occurs to the Equipments or the same or any part thereof is mis-utilised in any manner whatsoever, then the Contractor hereby agrees that the decision of the Project Manager of@..... as to assessment of loss or damage to the Equipments shall be final and binding on the Contractor. The Contractor binds itself and undertakes to replace the lost and/or damaged Equipments at its own cost and/or shall pay the amount of loss to@..... without any demur, reservation or protest. This is without prejudice to any other right or remedy that may be available to@..... against the Contractor under the Contract and under this INDEMNITY-CUM- UNDERTAKING AGREEMENT.
6. NOW THE CONDITION of this Bond is that if the Contractor shall duly and punctually comply with the terms and conditions of this Bond to the satisfaction of@....., THEN, the above Bond shall be void, but otherwise, it shall remain in full force and virtue.

@ Fill in abbreviated name of Employer.

IN WITNESS WHEREOF, the Contractor has hereunto set its hand through its authorised representative under the common seal of the Company, the day, month and year first above mentioned.

SCHEDULE No.1

Particulars of the Equipments handed over	Quantity Signature of	Particulars of Despatch Title Documents RR/GR/Bill of Lading No & Date	Carrier	Value of the Equip- ments Attorney in token of receipt

(Please number subsequent schedules)

For and on behalf of

.....
(Contractor's Name)

WITNESS

1.	1.	Signature	Signature
	2.	Name	Name
	3.	Address	Designation of Authorised representative *
2.	1.	Signature	(Common Seal) (In case of Company)
	2.	Name	
	3.	Address	

* INDEMNITY-CUM-UNDERTAKING AGREEMENT are to be executed by the authorised person and (i) in case of contracting Company under common seal of the Company or (ii) having the Power of Attorney issued under common seal of the company with authority to execute INDEMNITY-CUM-UNDERTAKING AGREEMENT, (iii) In case of (ii), the original Power of Attorney if it is specifically for this Contract or a photostat copy of the Power of Attorney if it is General Power of Attorney and such documents should be attached to INDEMNITY-CUM-UNDERTAKING AGREEMENT.

12. FORM OF AUTHORISATION LETTER

12. FORM OF AUTHORISATION LETTER

(NAME OF EMPLOYER)

(PROJECT)

REF. NO. :

DATE :

To,

M/s (*Contractor's Name*).....

Ref : Contract No..... Dated

for awarded by (*Name of Employer*)

Dear Sirs,

Kindly refer to Contract No..... Dated for(*Contract Name*)
You are hereby authorised on behalf of(*Name of Employer*) having its registered
office at and its Project at to take
physical delivery of materials/equipments covered under despatch Document/ Consignment
Note no..... * dated and as detailed in the
enclosed Schedule for the sole purpose of successful performance of the aforesaid contract and
for no other purposes, whatsoever.

(Signature of Project Authority)

(Designation :

Date

ENCL : as above

* Mention LR/RR No.

**SCHEDULE OF MATERIAL/EQUIPMENT COVERED UNDER
DESPATCH TITLE DOCUMENT (RR NO./ LR NO.)**

Sl. No.	Contract Name	NOA No./ Contract Agreement No.	Description of Materials/ Equipments	Spec. No.	Qty.	Value	Remarks

(SIGNATURE OF THE PROJECT AUTHORITY)

Designation).....

(Date).....

**14. FORM OF BANK GUARANTEE/
INSURANCE SURETY BOND TOWARDS
SECURITY BY ALL EXECUTENTS OF
DEED OF JOINT UNDERTAKING OTHER
THEN CONTRACTOR**

**14a. PROFORMA FOR BANK GUARANTEE
TO BE FURNISHED BY THE EXECUTANT OF DEED
JOINT UNDERTAKING OTHER THAN CONTRACTOR
(For Steam Generator Sets)**

(To be stamped in accordance with the Stamp Act,
if any, of the Country of the issuing Bank) :

Bank Guarantee No.....

Date

In consideration of[Employer's Name]..... (hereinafter referred to as "Employer" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to with its Registered Head Office at..... (herein-after referred to as.....or "Contractor") a Contract for Package for its (Name of Project) vide Contract No. dated and the same having been unequivocally accepted by the Contractor resulting in a "Contract", which award is on the strength of Deed of Joint Undertaking dated (hereinafter referred to as "Undertaking") given by M/s..... * (Contractor) and by (Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company) having its registered office at (hereinafter called..... or Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company), and the Contractor having further executed with (Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company) a Sub-Contract dated and the same having been unequivocally accepted by the Associate/Collaborator resulting in a Sub-Contract Agreement valued at for (hereinafter called "Sub-Contract Agreement") and (Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company) having agreed to provide a Performance Guarantee amounting to..... to the Employer on the terms and conditions specified in the "Undertaking".

We..... Bank, having its Head Office at..... (hereinafter referred to as the "Bank", which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay to the Employer on demand any and all monies to the extent of(Specify currency and amount in words and figures) only as aforesaid at any time upto.....@.....without any demur, reservation, context, recourse

or protest and/or without any references to "Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator" or "Contractor". Any such demand made by the Employer on the Bank shall be conclusive and binding, notwithstanding any difference between the Employer and Contractor and/or between the Employer and Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority. The Bank undertakes not to revoke this Guarantee during its currency without previous consent of the Employer and further agrees that the Guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

* Brief name of the Contractor.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Bank under this Guarantee, from time to time to extend the time for performance of the Contract or the Sub-Contract Agreement by the Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company. The Employer shall have the fullest liberty, without affecting this Guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator /Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company and to exercise the same at any time, in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract or Undertaking or any other course or remedy or security available to the Employer. The Bank shall not be released of its obligations under these presents by any exercise of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Bank from its obligations.

The Bank also agrees that the Employer at is option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against Contractor or Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company and notwithstanding any security or other guarantee that the Employer may have in relation to Contractor's or Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator liabilities.

Notwithstanding anything contained hereinabove our liability under this Guarantee is restricted to and, it shall remain in force upto and including @ and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s (Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company) on whose behalf this guarantee has been given.

Date this.....day of.....20.....at.....

WITNESS

(Signature).....

(Signature).....

(Name).....

(Name & Designation).....

(Official Address).....

(Bank's Seal).....

Authorised vide Power of
Attorney No.....

Date.....

Notes :

- 1.@ The date shall be as specified in the corresponding format for the Deed of Joint Undertaking enclosed in the Section 'Forms and Procedures'.
2. The Bank Guarantee shall be from a Bank as per provisions of Section-V (SCC) of the Bidding Documents.
3. The stamp papers of appropriate value shall be purchased in the name of guarantee issuing Bank or the Party on whose behalf for BG is being issued. The Bank Guarantee shall be issued on a stamp paper of value as per Stamp act prevailing in the State of India from where Bank Guarantee is issued or the State of India from where the BG shall be operated, whichever is higher.
4. While getting the Bank Guarantee issued, the Executant / Contractor is required to ensure compliance to the points mentioned in Form 15-Form of Bank Guarantee Verification Check List enclosed with the Bidding Documents. Further, the contractor is required to fill up this Form 15 and enclose the same with the Bank Guarantee.
5. The Sub-Contract agreement shall be the agreement signed between the Contractor and his Associate/Collaborator.
6. The Value shall be as specified in the Qualifying Requirements stipulated in BDS, Section III of Bidding Documents.

**14a-1. PROFORMA FOR INSURANCE SURETY BOND
TO BE FURNISHED BY THE EXECUTANT OF DEED
JOINT UNDERTAKING OTHER THAN CONTRACTOR
(For Steam Generator Sets)**

(To be stamped in accordance with the Stamp Act,
if any, of the Country of the issuing Bank) :

INSURANCE SURETY BOND No.....

Date

In consideration of[*Employer's Name*]..... (hereinafter referred to as "Employer" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to with its Registered Head Office at..... (hereinafter referred to as.....or "Contractor") a Contract for Package for its (Name of Project) vide Contract No. dated and the same having been unequivocally accepted by the Contractor resulting in a "Contract", which award is on the strength of Deed of Joint Undertaking dated (hereinafter referred to as "Undertaking") given by M/s..... * (Contractor) and by (Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company) having its registered office at (hereinafter called..... or Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company), and the Contractor having further executed with (Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company) a Sub-Contract dated and the same having been unequivocally accepted by the Associate/Collaborator resulting in a Sub-Contract Agreement valued at for (hereinafter called "Sub-Contract Agreement") and (Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company) having agreed to provide a Performance Guarantee amounting to..... to the Employer on the terms and conditions specified in the "Undertaking".

We[*Name & Address of the Insurer*].....having its Head Office at(hereinafter referred to as the 'Insurer', which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay to the Employer on demand any and all monies to the extent of(Specify currency and amount in words and figures) only as aforesaid at any time upto.....@.....without any demur, reservation, context, recourse

or protest and/or without any references to "Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator" or "Contractor". Any such demand made by the Employer on the Insurer shall be conclusive and binding, notwithstanding any difference between the Employer and Contractor and/or between the Employer and Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority. The Insurer undertakes not to revoke this Insurance Surety Bond during its currency without previous consent of the Employer and further agrees that the Guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

* Brief name of the Contractor.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Insurer under this Guarantee, from time to time to extend the time for performance of the Contract or the Sub-Contract Agreement by the Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company. The Employer shall have the fullest liberty, without affecting this Guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator /Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company and to exercise the same at any time, in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract or Undertaking or any other course or remedy or security available to the Employer. The Insurer shall not be released of its obligations under these presents by any exercise of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Insurer from its obligations.

The Insurer also agrees that the Employer at is option shall be entitled to enforce this Guarantee against the Insurer as Surety, in the first instance without proceeding against Contractor or Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company and notwithstanding any security or other guarantee that the Employer may have in relation to Contractor's or Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator liabilities.

Notwithstanding anything contained hereinabove our liability under this Insurance Surety Bond is restricted to and, it shall remain in force upto and including @..... and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s (Qualified Steam Generator Manufacturer/Other Promoters of Subsidiary Company/Other Promoters of JV Company/Collaborator/Subsidiary Company of Indian subsidiary or JV Company/Indian Company holding at least 51% equity in the JV Company/wholly owned subsidiary company of majority stake holder in JV Company) on whose behalf this Insurance Surety Bond has been given.

Date this.....day of.....20.....at.....

.....
(Signature)

.....
(Name)

.....
(Designation with Insurer Stamp)

Authorised Vide Power of
Attorney No.....

Date.....

Notes :

- 1.@ The date shall be as specified in the corresponding format for the Deed of Joint Undertaking enclosed in the Section 'Forms and Procedures'.
2. The Insurance Surety Bond shall be from an Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI).
3. The Employer shall be the Creditor, the Associate / Collaborator shall be the Principal debtor and the Insurance company/Insurer shall be the Surety in respect of the Insurance Surety Bond to be issued by the Insurer.
4. The Insurance Surety Bond should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the state(s) where the Insurance Surety Bond is submitted or is to be acted upon or the rate prevailing in State where the Insurance Surety Bond is executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Bidder/Insurer issuing the Insurance Surety Bond.
5. While getting the Insurance Surety Bond issued, the Contractor is required to ensure compliance to the points mentioned in Form of Bank Guarantee/ Insurance Surety Bond Verification Check List. Further, the Contractor is required to fill up this Form and enclose the same with the Insurance Surety Bond .
6. The Sub-Contract agreement shall be the agreement signed between the Contractor and his Associate/Collaborator.
7. The Value shall be as specified in the Qualifying Requirements stipulated in BDS, Section III of Bidding Documents.

**14b. PROFORMA FOR BANK GUARANTEE
TO BE FURNISHED BY EXECUTENTS OF DEED OF
JOINT UNDERTAKING OTHER THAN CONTRACTOR**

(For Steam Turbine Generator Sets)

(To be stamped in accordance with the Stamp Act,
if any, of the Country of the issuing Bank) :

Bank Guarantee No.....

Date

In consideration of[Employer's Name]..... (hereinafter referred to as "Employer" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to with its Registered Head Office at..... (herein-after referred to as.....or "Contractor") a Contract for Package for its (Name of Project) vide Contract No. dated and the same having been unequivocally accepted by the Contractor resulting in a "Contract", which award is on the strength of Deed of Joint Undertaking dated (hereinafter referred to as "Undertaking") given by M/s..... * (Contractor) and by (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) having its registered office at (hereinafter called..... or (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) and the Contractor having further executed with (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) a Sub-Contract dated and the same having been unequivocally accepted by the (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) resulting in a Sub-Contract Agreement valued at for (hereinafter called "Sub-Contract Agreement") and (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) having agreed to provide a Performance Guarantee amounting to.....to the Employer on the terms and conditions specified in the "Undertaking".

We..... Bank, having its Head Office at..... (hereinafter referred to as the “Bank”, which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay to the Employer on demand any and all monies to the extent of(Specify currency and amount in words and figures) only as aforesaid at any time upto.....@.....without any demur, reservation, context, recourse or protest and/or without any references to (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) or “Contractor”. Any such demand made by the Employer on the Bank shall be conclusive and binding, notwithstanding any difference between the Employer and Contractor and/or between the Employer and (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority. The Bank undertakes not to revoke this Guarantee during its currency without previous consent of the Employer and further agrees that the Guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

* Brief name of the Contractor

The Employer shall have the fullest liberty, without affecting in any way the liability of the Bank under this Guarantee, from time to time to extend the time for performance of the Contract or the Sub-Contract Agreement by the (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**). The Employer shall have the fullest liberty, without affecting this Guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) and to exercise the same at any time, in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract or Undertaking or any other course or remedy or security available to the Employer. The Bank shall not be released of its obligations under these presents by any exercise of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Bank from its obligations.

The Bank also agrees that the Employer at is option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against Contractor or (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) and

notwithstanding any security or other guarantee that the Employer may have in relation to Contractor's or (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) liabilities.

Notwithstanding anything contained hereinabove our liability under this Guarantee is restricted to and, it shall remain in force upto and including @ and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) on whose behalf this guarantee has been given.

Date this..... day of 20 at

WITNESS

(Signature)..... (Signature).....

(Name)..... (Name & Designation).....

(Official Address)..... (Bank's Seal).....

Authorised vide Power of
Attorney No.....

Notes :

Date.....

- 1.@ The date shall be as specified in the corresponding format for the Deed of Joint Undertaking enclosed in the Section 'Forms and Procedures'.
2. The Bank Guarantee shall be from a Bank as per provisions of Section-V (SCC) of the Bidding Documents.
3. The stamp papers of appropriate value shall be purchased in the name of guarantee issuing Bank or the Party on whose behalf for BG is being issued. The Bank Guarantee shall be issued on a stamp paper of value as per Stamp act prevailing in the State of India from where Bank Guarantee is issued or the State of India from where the BG shall be operated, whichever is higher.
4. While getting the Bank Guarantee issued, the Executents/Contractor is required to ensure compliance to the points mentioned in Form 15-Form of Bank Guarantee Verification Check List enclosed with the Bidding Documents. Further, the contractor is required to fill up this Form 15 and enclose the same with the Bank Guarantee.
5. The Value shall be as specified in the Qualifying Requirements stipulated in BDS, Section III of Bidding Documents.

**14b1. PROFORMA FOR INSURANCE SURETY BOND
TO BE FURNISHED BY EXECUTENTS OF DEED OF
JOINT UNDERTAKING OTHER THAN CONTRACTOR**

(For Steam Turbine Generator Sets)

(To be stamped in accordance with Stamp Act of India)

INSURANCE SURETY BOND No.....

Date

In consideration of[Employer's Name]..... (hereinafter referred to as "Employer" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to with its Registered Head Office at..... (herein-after referred to as.....or "Contractor") a Contract for Package for its (Name of Project) vide Contract No. dated and the same having been unequivocally accepted by the Contractor resulting in a "Contract", which award is on the strength of Deed of Joint Undertaking dated (hereinafter referred to as "Undertaking") given by M/s..... * (Contractor) and by (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) having its registered office at (hereinafter called..... or (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) and the Contractor having further executed with (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) a Sub-Contract dated and the same having been unequivocally accepted by the (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) resulting in a Sub-Contract Agreement valued at for (hereinafter called "Sub-Contract Agreement") and (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) having agreed to provide a Performance Guarantee amounting to.....to the Employer on the terms and conditions specified in the "Undertaking".

We, ...[Name & Address of the Insurer].....having its Head Office at..... (hereinafter referred to as the “Insurer”, which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay to the Employer on demand any and all monies to the extent of(Specify currency and amount in words and figures) only as aforesaid at any time upto.....@.....without any demur, reservation, context, recourse or protest and/or without any references to (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) or “Contractor”. Any such demand made by the Employer on the Insurer shall be conclusive and binding, notwithstanding any difference between the Employer and Contractor and/or between the Employer and (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority. The Insurer undertakes not to revoke this Insurance Surety Bond during its currency without previous consent of the Employer and further agrees that the Guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

* Brief name of the Contractor

The Employer shall have the fullest liberty, without affecting in any way the liability of the Insurer under this Guarantee, from time to time to extend the time for performance of the Contract or the Sub-Contract Agreement by the (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**). The Employer shall have the fullest liberty, without affecting this Guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) and to exercise the same at any time, in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract or Undertaking or any other course or remedy or security available to the Employer. The Insurer shall not be released of its obligations under these presents by any exercise of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Insurer from its obligations.

The Insurer also agrees that the Employer at is option shall be entitled to enforce this Guarantee against the Insurer as Surety, in the first instance without proceeding against Contractor or (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) and

notwithstanding any security or other guarantee that the Employer may have in relation to Contractor's or (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) liabilities.

Notwithstanding anything contained hereinabove our liability under this Insurance Surety Bond is restricted to and, it shall remain in force upto and including @..... and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s (Qualified Steam Turbine Generator Manufacturer**/other Promoters of Subsidiary Company**/Other Promoters of Joint Venture Company**/Collaborator**/Subsidiary company of Indian Subsidiary or JV Company**/Indian Company holding at least 51% equity in the JV Company**/wholly owned subsidiary company of majority stack holder in JV Company**) on whose behalf this guarantee has been given.

Date this..... day of 20 at

WITNESS

(Signature).....	(Signature).....
(Name).....	(Name & Designation).....
(Official Address).....	(Insurer's Seal).....
	Authorised vide Power of Attorney No..... Date.....

Notes :

- 1.@ The date shall be as specified in the corresponding format for the Deed of Joint Undertaking enclosed in the Section 'Forms and Procedures'.
2. The Insurance Surety Bond shall be from an Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI).
3. The Employer shall be the Creditor, the Associate / Collaborator shall be the Principal debtor and the Insurance company/Insurer shall be the Surety in respect of the Insurance Surety Bond to be issued by the Insurer.
4. The Insurance Surety Bond should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the state(s) where the Insurance Surety Bond is submitted or is to be acted upon or the rate prevailing in State where the Insurance Surety Bond is executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Bidder/Insurer issuing the Insurance Surety Bond.
5. While getting the Insurance Surety Bond issued, the Contractor is required to ensure compliance to the points mentioned in Form of Bank Guarantee/ Insurance Surety Bond Verification Check List. Further, the Contractor is required to fill up this Form and enclose the same with the Insurance Surety Bond .
6. The Sub-Contract agreement shall be the agreement signed between the Contractor and his Associate/Collaborator.

7. The Value shall be as specified in the Qualifying Requirements stipulated in BDS, Section III of Bidding Documents.

**14c. PROFORMA FOR BANK GUARANTEE
TO BE FURNISHED BY THE EXECUTANT OF DEED
JOINT UNDERTAKING OTHER THAN CONTRACTOR
(For Project Management Experience)**

(To be stamped in accordance with the Stamp Act,
if any, of the Country of the issuing Bank) :

Bank Guarantee No.....

Date

In consideration of[Employer's Name]..... (hereinafter referred to as "Employer" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to with its Registered Head Office at..... (herein-after referred to as.....or "Contractor") a Contract for Package for its (Name of Project) vide Contract No. dated and the same having been unequivocally accepted by the Contractor resulting in a "Contract", which award is on the strength of Deed of Joint Undertaking dated (hereinafter referred to as "Undertaking") given by M/s..... * (Contractor) and by (Project Management Organisation) having its registered office at (hereinafter called..... Associate/Collaborator or Project Management Organisation), and the Contractor having further executed with (Project Management Organisation) a Sub-Contract dated and the same having been unequivocally accepted by the Associate/Collaborator/Project Management Organisation resulting in a Sub-Contract Agreement valued at for (hereinafter called "Sub-Contract Agreement") and (Project Management Organisation) having agreed to provide a Performance Guarantee amounting to.....#..... to the Employer on the terms and conditions specified in the "Undertaking".

We..... Bank, having its Head Office at..... (hereinafter referred to as the "Bank", which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay to the Employer on demand any and all monies to the extent of#.....(Specify currency and amount in words and figures) only as aforesaid at any time upto.....@.....without any demur, reservation, context, recourse or protest and/or without any references to "Project Management Organisation" or "Contractor". Any such demand made by the Employer on the Bank shall be conclusive and binding, notwithstanding any difference between the Employer and Contractor and/or between the Employer and Project Management Organisation or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority. The Bank undertakes not to revoke this Guarantee during its currency without previous consent of the Employer and further agrees that the Guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

* Brief name of the Contractor.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Bank under this Guarantee, from time to time to extend the time for performance of the Contract or the Sub-Contract Agreement by the Project Management Organisation. The Employer shall

have the fullest liberty, without affecting this Guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Project Management Organisation and to exercise the same at any time, in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract or Undertaking or any other course or remedy or security available to the Employer. The Bank shall not be released of its obligations under these presents by any exercise of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Bank from its obligations.

The Bank also agrees that the Employer at is option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against Contractor or Project Management Organisation and notwithstanding any security or other guarantee that the Employer may have in relation to Contractor's or Project Management Organisation's/Associate's/Collaborator's liabilities.

Notwithstanding anything contained hereinabove our liability under this Guarantee is restricted to#..... and, it shall remain in force upto and including @ and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s (Project Management Organisation) on whose behalf this guarantee has been given.

Date this.....day of.....20.....at.....

The Value shall be as specified in the Qualifying Requirements stipulated in BDS, Section III of Bidding Documents.

WITNESS

(Signature).....

(Signature).....

(Name).....

(Name & Designation).....

(Official Address).....

(Bank's Seal).....

Authorised vide Power of
Attorney No.....

Date.....

Notes :

- 1.@ The date shall be as specified in the corresponding format for the Deed of Joint Undertaking enclosed in the Section 'Forms and Procedures'.
2. The Bank Guarantee shall be from a Bank as per provisions of Section-V (SCC) of the Bidding Documents.

3. The stamp papers of appropriate value shall be purchased in the name of guarantee issuing Bank or the Party on whose behalf for BG is being issued. The Bank Guarantee shall be issued on a stamp paper of value as per Stamp act prevailing in the State of India from where Bank Guarantee is issued or the State of India from where the BG shall be operated, whichever is higher.
4. While getting the Bank Guarantee issued, the Executant / Contractor is required to ensure compliance to the points mentioned in Form 15-Form of Bank Guarantee Verification Check List enclosed with the Bidding Documents. Further, the contractor is required to fill up this Form 15 and enclose the same with the Bank Guarantee.
5. The Sub-Contract agreement shall be the agreement signed between the Contractor and his Associate/Collaborator/Project Management Organization.

**14c-1. PROFORMA FOR INSURANCE SURETY BOND
TO BE FURNISHED BY THE EXECUTANT OF DEED
JOINT UNDERTAKING OTHER THAN CONTRACTOR
(For Project Management Experience)**

(To be stamped in accordance with the Stamp Act of India)

Insurance Surety Bond No.....

Date

In consideration of[*Employer's Name*]..... (hereinafter referred to as "Employer" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to with its Registered Head Office at..... (herein-after referred to as.....or "Contractor") a Contract for Package for its (Name of Project) vide Contract No. dated and the same having been unequivocally accepted by the Contractor resulting in a "Contract", which award is on the strength of Deed of Joint Undertaking dated (hereinafter referred to as "Undertaking") given by M/s..... * (Contractor) and by (Project Management Organisation) having its registered office at (hereinafter called..... Associate/Collaborator or Project Management Organisation), and the Contractor having further executed with (Project Management Organisation) a Sub-Contract dated and the same having been unequivocally accepted by the Associate/Collaborator/Project Management Organisation resulting in a Sub-Contract Agreement valued at for (hereinafter called "Sub-Contract Agreement") and (Project Management Organisation) having agreed to provide a Performance Guarantee amounting to.....#..... to the Employer on the terms and conditions specified in the "Undertaking".

We.....[*Name & Address of the Insurer*].....having its Head Office at..... (hereinafter referred to as the "Insurer", which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay to the Employer on demand any and all monies to the extent of#.....(Specify currency and amount in words and figures) only as aforesaid at any time upto.....@.....without any demur, reservation, context, recourse or protest and/or without any references to "Project Management Organisation" or "Contractor". Any such demand made by the Employer on the Insurer shall be conclusive and binding, not withstanding any difference between the Employer and Contractor and/or between the Employer and Project Management Organisation or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority. The Insurer undertakes not to revoke this Insurance Surety Bond during its currency without previous consent of the Employer and further agrees that the Guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

* Brief name of the Contractor.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Insurer under this Insurance Surety Bond, from time to time to extend the time for performance of the Contract or the Sub-Contract Agreement by the Project Management Organisation. The Employer shall

have the fullest liberty, without affecting this Insurance Surety Bond, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Project Management Organisation and to exercise the same at any time, in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract or Undertaking or any other course or remedy or security available to the Employer. The Insurer shall not be released of its obligations under these presents by any exercise of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Insurer from its obligations.

The Insurer also agrees that the Employer at its option shall be entitled to enforce this Insurance Surety Bond against the Insurer as a principal debtor, in the first instance without proceeding against Contractor or Project Management Organisation and notwithstanding any security or other guarantee that the Employer may have in relation to Contractor's or Project Management Organisation's/Associate's/Collaborator's liabilities.

Notwithstanding anything contained hereinabove our liability under this Insurance Surety Bond is restricted to#..... and, it shall remain in force upto and including @ and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s (Project Management Organisation) on whose behalf this Insurance Surety Bond has been given.

Date this.....day of.....20.....at.....

The Value shall be as specified in the Qualifying Requirements stipulated in BDS, Section III of Bidding Documents.

WITNESS :

(Signature).....

(Signature).....

(Name).....

(Name & Designation).....

(Official Address).....

(Bank's Seal).....

Authorised vide Power of
Attorney No.....

Date.....

Notes :

1. (@)The date shall be as specified in the corresponding format for the Deed of Joint Undertaking enclosed in the Section 'Forms and Procedures'.

2. The Insurance Surety Bond shall be from an Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI).

3. The Employer shall be the Creditor, the Associate / Collaborator shall be the Principal debtor and the Insurance company/Insurer shall be the Surety in respect of the Insurance Surety Bond to be issued by the Insurer.

4. The Insurance Surety Bond should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the state(s) where the Insurance Surety Bond is submitted or is to be acted upon or the rate prevailing in State where the Insurance Surety Bond is executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Bidder/Insurer issuing the Insurance Surety Bond.

5. While getting the Insurance Surety Bond issued, the Contractor is required to ensure compliance to the points mentioned in Form of Bank Guarantee/ Insurance Surety Bond Verification Check List. Further, the Contractor is required to fill up this Form and enclose the same with the Insurance Surety Bond .

**14d. PROFORMA FOR BANK GUARANTEE
TO BE FURNISHED BY THE EXECUTANT OF DEED
JOINT UNDERTAKING OTHER THAN CONTRACTOR
(For Engineering Experience)**

(To be stamped in accordance with the Stamp Act,
if any, of the Country of the issuing Bank) :

Bank Guarantee No.....

Date

In consideration of[Employer's Name]....., (hereinafter referred to as "Employer" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to with its Registered Head Office at..... (hereinafter referred to as.....or "Contractor") a Contract for Package for its (Name of Project) vide Contract No. dated and the same having been unequivocally accepted by the Contractor resulting in a "Contract", which award is on the strength of Deed of Joint Undertaking dated (hereinafter referred to as "Undertaking") given by M/s..... * (Contractor) and by (Architect Engineering Firm) having its registered office at (hereinafter called..... Associate/Collaborator or Architect Engineering Firm), and the Contractor having further executed with (Architect Engineering Firm) a Sub-Contract dated and the same having been unequivocally accepted by the Associate/Collaborator/Architect Engineering Firm resulting in a Sub-Contract Agreement valued at for (hereinafter called "Sub-Contract Agreement") and (Architect Engineering Firm) having agreed to provide a Performance Guarantee amounting to.....#..... to the Employer on the terms and conditions specified in the "Undertaking".

We..... Bank, having its Head Office at..... (hereinafter referred to as the "Bank", which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay to the Employer on demand any and all monies to the extent of#.....(Specify currency and amount in words and figures) only as aforesaid at any time upto.....@.....without any demur, reservation, context, recourse or protest and/or without any references to "Architect Engineering Firm" or "Contractor". Any such demand made by the Employer on the Bank shall be conclusive and binding, notwithstanding any difference between the Employer and Contractor and/or between the Employer and Architect Engineering Firm or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority. The Bank undertakes not to revoke this Guarantee during its currency without previous consent of the Employer and further agrees that the Guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

* Brief name of the Contractor.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Bank under this Guarantee, from time to time to extend the time for performance of the Contract or the Sub-Contract Agreement by the Architect Engineering Firm. The Employer shall have the fullest liberty, without affecting this Guarantee, to postpone from time to time the exercise of any

powers vested in them or of any right which they might have against the Architect Engineering Firm and to exercise the same at any time, in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract or Undertaking or any other course or remedy or security available to the Employer. The Bank shall not be released of its obligations under these presents by any exercise of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Bank from its obligations.

The Bank also agrees that the Employer at is option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against Contractor or Architect Engineering Firm and notwithstanding any security or other guarantee that the Employer may have in relation to Contractor's or Architect Engineering Firm's/Associate's/Collaborator's liabilities.

Notwithstanding anything contained hereinabove our liability under this Guarantee is restricted to#..... and, it shall remain in force upto and including @ and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s (Architect Engineering Firm) on whose behalf this guarantee has been given.

Date this.....day of.....20.....at.....

The Value shall be as specified in the Qualifying Requirements stipulated in BDS, Section III of Bidding Documents.

WITNESS

(Signature).....

(Signature).....

(Name).....

(Name & Designation).....

(Official Address).....

(Bank's Seal).....

Authorised vide Power of
Attorney No.....

Date.....

Notes :

- 1.@ The date shall be as specified in the corresponding format for the Deed of Joint Undertaking enclosed in the Section 'Forms and Procedures'.
2. The Bank Guarantee shall be from a Bank as per provisions of Section-V (SCC) of the Bidding Documents.
3. The stamp papers of appropriate value shall be purchased in the name of guarantee issuing Bank or the Party on whose behalf for BG is being issued. The Bank Guarantee

shall be issued on a stamp paper of value as per Stamp act prevailing in the State of India from where Bank Guarantee is issued or the State of India from where the BG shall be operated, whichever is higher.

4. While getting the Bank Guarantee issued, the Executant / Contractor is required to ensure compliance to the points mentioned in Form 15-Form of Bank Guarantee Verification Check List enclosed with the Bidding Documents. Further, the contractor is required to fill up this Form 15 and enclose the same with the Bank Guarantee.
5. The Sub-Contract agreement shall be the agreement signed between the Contractor and his Associate/Collaborator/Architect Engineering Firm.

**14d-1. PROFORMA FOR INSURANCE SURETY BOND
TO BE FURNISHED BY THE EXECUTANT OF
DEED JOINT UNDERTAKING OTHER THAN
CONTRACTOR
(For Engineering Experience)**

(To be stamped in accordance with the Stamp Act
of India)

Insurance Surety Bond

No..... Date

.....

In consideration of[*Employer's Name*]....., (hereinafter referred to as "Employer" which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to with its Registered Head Office at..... (herein-after referred to as.....or "Contractor") a Contract for Package for its (Name of Project) vide Contract No. dated and the same having been unequivocally accepted by the Contractor resulting in a "Contract", which award is on the strength of Deed of Joint Undertaking dated (hereinafter referred to as "Undertaking") given by M/s..... * (Contractor) and by (Architect Engineering Firm) having its registered office at (hereinafter called..... Associate/Collaborator or Architect Engineering Firm), and the Contractor having further executed with (Architect Engineering Firm) a Sub-Contract dated and the same having been unequivocally accepted by the Associate/Collaborator/Architect Engineering Firm resulting in a Sub-Contract Agreement valued at for (hereinafter called "Sub-Contract Agreement") and (Architect Engineering Firm) having agreed to provide a Performance Guarantee amounting to.....#..... to the Employer on the terms and conditions specified in the "Undertaking".

We.....[*Name & Address of the Insurer*].....having its Head Office at..... (hereinafter referred to as the "Insurer", which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay to the Employer on demand any and all monies to the extent of#.....(Specify currency and amount in words and figures) only as aforesaid at any time upto.....@.....without any demur, reservation, context, recourse or protest and/or without any references to "Architect Engineering Firm" or "Contractor". Any such demand made by the Employer on the Insurer shall be conclusive and binding, notwithstanding any difference between the Employer and Contractor and/or between the Employer and Architect Engineering Firm

or any dispute pending before any Court, Tribunal, Arbitrator or any other Authority. The Insurer undertakes not to revoke this Insurance Surety Bond during its currency without previous consent of the Employer and further agrees that the Guarantee herein contained shall be enforceable till ninety (90) days after expiry of its validity.

* Brief name of the Contractor.

The Employer shall have the fullest liberty, without affecting in any way the liability of the Insurer under this Insurance Surety Bond, from time to time to extend the time for performance of the Contract or the Sub-Contract Agreement by the Architect Engineering Firm. The Employer shall have the fullest liberty, without affecting this Insurance Surety Bond, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Architect Engineering Firm and to exercise the same at any time, in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract or Undertaking or any other course or remedy or security available to the Employer. The Insurer shall not be released of its obligations under these presents by any exercise of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Employer or any other indulgence shown by the Employer or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Insurer from its obligations.

The Insurer also agrees that the Employer at is option shall be entitled to enforce this Insurance Surety Bond against the Insurer as a principal debtor, in the first instance without proceeding against Contractor or Architect Engineering Firm and notwithstanding any security or other guarantee that the Employer may have in relation to Contractor's or Architect Engineering Firm's/Associate's/Collaborator's liabilities.

Notwithstanding anything contained hereinabove our liability under this Insurance Surety Bond is restricted to#..... and, it shall remain in force upto and including @ and shall be extended from time to time for such period (not exceeding one year), as may be desired by M/s (Architect Engineering Firm) on whose behalf this Insurance Surety Bond has been given.

Date this.....day
of.....20.....at.....

The Value shall be as specified in the Qualifying Requirements stipulated in BDS, Section III of Bidding Documents.

WITNESS :

(Signature).....

(Signature).....

(Name).....

(Name & Designation).....

(Official Address).....

(Bank's Seal).....

Authorised vide Power of
Attorney No.....

Date.....

Notes :

1. (@)The date shall be as specified in the corresponding format for the Deed of Joint Undertaking enclosed in the Section 'Forms and Procedures'.
2. The Insurance Surety Bond shall be from an Insurer as per guidelines issued by Insurance Regulatory and Development Authority of India (IRDAI).
3. The Employer shall be the Creditor, the Associate / Collaborator shall be the Principal debtor and the Insurance company/Insurer shall be the Surety in respect of the Insurance Surety Bond to be issued by the Insurer.
4. The Insurance Surety Bond should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the state(s) where the Insurance Surety Bond is submitted or is to be acted upon or the rate prevailing in State where the Insurance Surety Bond is executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Bidder/Insurer issuing the Insurance Surety Bond.
5. While getting the Insurance Surety Bond issued, the Contractor is required to ensure compliance to the points mentioned in Form of Bank Guarantee/ Insurance Surety Bond Verification Check List. Further, the Contractor is required to fill up this Form and enclose the same with the Insurance Surety Bond .

**15. FORM OF BANK
GUARANTEE/ INSURANCE
SURETY BOND VERIFICATION
CHECK LIST**

BANK GUARANTEE/INSURANCE SURETY BOND VERIFICATION CHECKLIST

1. Bank Guarantee/Insurance Surety Bond No.
2. Issuing Bank/Insurer
3. Amount of BG/Insurance Surety Bond
4. Nature of BG/Insurance Surety Bond & No. of Pages
5. Validity of BG/Insurance Surety Bond
6. Package Description
7. Party & Contracts Ref. Name, Address, Tel, Fax,
e-mail, Contract No.
Package Name
8. Bank/Insurer Reference Name, Address, Tel. Fax, E-mail

CHECK LIST

S.No.	Details of Checks	Yes/No
a)	Is the BG/Insurance Surety Bond on non-judicial stamp paper / e-stamp paper of appropriate value, as per Stamp Act?	
b)	Whether date, purpose of purchase and name of the purchaser are indicated on the stamp paper? (The date of purchase of stamp paper should be of any date on or before the date of execution of BG/Insurance Surety Bond and the stamp paper should be purchased either in the name of the executing Bank/Insurer or the Party on whose behalf the BG/Insurance Surety Bond has been issued. The stamp paper (other than e-stamp paper) should be duly Signed by the Stamp Vendor)	
c)	Has the executing Officer of BG/Insurance Surety Bond indicated his name, designation and Power of Attorney No. / Signing Power No. etc. on the BG/Insurance Surety Bond?	
e)	Is each page of BG/Insurance Surety Bond duly signed/initiated by executant	

- f) and whether stamp of Bank/Insurer is affixed thereon? Whether the last page is signed with full particulars including two witnesses under seal of Bank/Insurer as required in the prescribed proforma?
- g) Does the Bank Guarantee/Insurance Surety Bond compare verbatim with the Proforma prescribed in the Bid Documents?
- h) Are the factual details such as Bid Document No., NOA / LOA / Contract No., Contract Price, Percentage of Advance, Amount of BG/Insurance Surety Bond and Validity of BG/Insurance Surety Bond correctly mentioned in the BG/ Insurance Surety Bond?
- i) Whether overwriting / cutting if any on the BG/ Insurance Surety Bond have been properly authenticated under signature & seal of executant?
- j) Whether the BG/Insurance Surety Bond has been issued by a Bank/Insurer in line with the provisions of Bid/Contract Documents?
- k) In case BG has been issued by a Bank other than those specified in Bid/Contract Document, is the BG confirmed by a Bank in India acceptable as per Bid/Contract Documents?

Date : Signature

Place : Printed Name

(Designation)

(Common Seal)

Note : Bidder / Contractor / Promoters / Collaborator is required to fill up this form and enclose along with the Bank Guarantee.

**16. FORM OF VALIDITY EXTENSION
OF BANK GUARANTEE**

FORM OF EXTENSION OF BANK GUARANTEE/ INSURANCE SURETY BOND

(To be stamped in accordance with the Stamp Act,
if any, of the Country of the issuing Bank) :

Ref. No.:
@ _____

Date:

Dear Sirs,

Subject : Extension of Bank Guarantee/Insurance Surety Bond No. _____ dated _____
_____ for[indicate value of Bank
Guarantee/Insurance Surety Bond].....favouring ourselves expiring on __on
account of M/s..... (Name of Bidder).....in respect of Contract for (Insert
Package name) _____ (Insert Project Name)
_____ project, Contract No.
_____ dated _
_____ (hereinafter called original
Bank Guarantee/Insurance Surety Bond)

At the request of M/s _____ we _____ Bank/Insurer
branch office at _____ and having its Head office at _____
_____ do hereby extend our
liability under the above mentioned guarantee No. _____
_____ dated for a further period of _____ year/months
from ____ to expire on _____.

Except as provided above, all other terms and conditions of original Bank
Guarantee/Insurance Surety Bond No. _____ dated ____ shall remain unaltered
and binding.

Please treat this as an integral part of the original guarantee to which it would be deemed to
have been attached.

..... (Signature)

..... (Name)

..... (Designation with
Bank/Insurer Stamp)

Authorised vide

Power of Attorney No..... Date.....

Dated _____

SEAL OF BANK/INSURANCE COMPANY

Note:

1. @ The extension of the Bank Guarantee/Insurance Surety Bond
should be forwarded to the Unit/ Project/Corporate Centre, from where the extension
has been sought.

2. The extension of BG/Insurance Surety Bond should be on Non-Judicial stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG/Insurance Surety Bond is submitted or is to be acted upon or the rate prevailing in the State where the BG is executed, whichever is higher. The Stamp Paper/e-Stamp paper shall be purchased in the name of Bidder/Bank issuing the guarantee.

**17. FORM OF INDEMNITY-CUM-UNDERTAKING
AGREEMENT [FOR REMOVAL / DISPOSAL OF SCRAP
/ SURPLUS MATERIAL]**

**17. FORM OF INDEMNITY-CUM-UNDERTAKING AGREEMENT WITH REGARD TO
REMOVAL/DISPOSAL OF SCRAP/SURPLUS MATERIAL**

(TO BE EXECUTED ON STAMP PAPER OF APPROPRIATE VALUE)

INDEMNITY-CUM-UNDERTAKING AGREEMENT

THIS INDEMNITY-CUM-UNDERTAKING AGREEMENT executed this day
of..... 20 between(Name of Company)
..... a Company /Partnership Firm / Proprietary Concern incorporated
under the laws of having its Registered Office(s) at
..... (Office Address) hereinafter called the 'Contractor'
(which expression shall, unless excluded by or repugnant to the context, be deemed to mean and
include its successors, administrators, executors and permitted assigns)

AND

M/s. having its registered office at
..... (hereinafter referred to as 'Employer').

1. 'Employer' has awarded the 'Contractor', contract for execution of work ("Scope of Work")
as mentioned in the contract agreement no. dated
....., entered into between 'Employer' and 'Contractor', relating to
..... (Name & Address of Project/Station)
..... (hereinafter called 'the Project').
2. The 'Contractor' for the purpose of execution of its Scope of Work had from time to time
procured and stored (Details of Material) at the
Project Site.
3. After completion of the Scope of Work by 'Contractor', it has been identified that scrap
..... (Details of Scrap Material & its quantity) and/or
surplus (Details of Surplus Material & its Quantity)
belonging to 'Contractor' is lying at the said Project Site.
4. Now, the scrap (Details of Scrap Material & its Quantity)
and/or surplus (Details of Surplus Material & its Quantity)
belonging to the 'Contractor', requires to be removed by 'Contractor' from the Project Site.

**NOW THEREFORE THIS INDEMNITY-CUM-UNDERTAKING AGREEMENT WITNESSETH
AS UNDER:**

1. That 'Contractor' by way of this Indemnity-cum-Undertaking Agreement requests
'Employer' to issue necessary exit gate pass(es) in favour of 'Contractor' for removal of

scrap..... (Details of Scrap Material & its Quantity) and/or
surplus (Details of Surplus Material & its Quantity)
belonging to 'Contractor', from the project.

2. That as per Employer's procedure, 'Contractor' shall ensure loading of trucks for clearing of its scrap (Details of Scrap Material & its Quantity) and/or surplus (Details of Surplus Material & its Quantity) by itself, as aforesaid, under the supervision of CISF personnel.
3. That 'Contractor' in consideration of the premises above, for itself and its respective, executors, administrators and assigns, jointly and severally agree and undertake from time to time and at all times hereafter to indemnify 'Employer' and keep 'Employer' indemnified from and against all claims, demands, actions, liabilities and expenses which may be made or taken against or incurred by 'Employer' by reason of the issue of necessary gate pass(es) by 'Employer' and permitting 'Contractor' to remove scrap (Details of Scrap Material & its Quantity) and/or surplus (Details of Surplus Material & its Quantity) belonging to 'Contractor', from the project.
4. That 'Contractor' undertakes to indemnify and keep 'Employer' harmless from any act of omission or negligence on the part of the 'Contractor' in following the statutory requirements with regard to removal/disposal of scrap and surplus belonging to 'Contractor', from the Project Site aforesaid, by the 'Contractor'. Further, in case the laws require 'Employer' to take prior permission of the relevant Authorities before handing over the scrap and/or surplus to the 'Contractor', the same shall be obtained by the 'Contractor' on behalf of 'Employer'.

IN WITNESS WHEREOF, the 'Contractor' and the 'Employer', through their authorized representative, have executed these presents on the Day, Month and Year first mentioned above at (Name of the Place)

For and on behalf of

.....
(Contractor's Name)

Signature
Name
Designation of
Authorised representative *

For and on behalf of

.....
(Employer's name)

Signature
Name
Designation of
Authorised representative *

WITNESS :

1. Signature
2. Name
3. Address

WITNESS :

1. Signature
2. Name
3. Address

-
- * Indemnity-cum-Undertaking Agreement are to be executed by the authorised person and (i) in case of contracting Company under common seal of the Company or (ii) having the Power of Attorney issued under common seal of the company with authority to execute Indemnity-cum-Undertaking Agreement , (iii) In case of (ii), the original Power of Attorney if it is specifically for this Contract or a photostat copy of the Power of Attorney if it is General Power of Attorney and such documents should be attached to Indemnity-cum-Undertaking Agreement. In case of Employer, by the authorized representative of the Employer.

18. FORM OF CONTRACT CLOSING CERTIFICATES

PROFORMA OF CERTIFICATE OF FINAL AMENDMENT TO THE CONTRACT

(To BE ISSUED BY CORPORATE CONTRACT SERVICES)

CERTIFICATE NO. CCP - 01

NAME OF PACKAGE:

**LETTER OF AWARD/ NOA/
CONTRACT NO. :**

NAME OF CONTRACTOR

DATED:

This is to certify that amendments have been issued to the aforesaid contract as per the details mentioned below:

	Amendment No.	Date
1.		
2.		
3.		
4.		
5.		

This is to certify further that Amendment No.----- dated is the last amendment issued.

Signature

Date
Place.....

Name.....
Designation

PROFORMA FOR DRAWING RECEIPT CERTIFICATE

(TO BE ISSUED BY ENGINEERING)

CERTIFICATE NO.CCP- 02

NAME OF PACKAGE:

**LETTER OF AWARD/
NOA/ CONTRACT NO.:**

NAME OF CONTRACTOR

DATED:

Project:

This is to certify that we have received all the drawings which were to be submitted by the Contractor in requisite number along with the reproducibles as detailed in Annexure enclosed herewith, as per provisions stipulated in the above mentioned LOA/Contract.

Signature

Date
Place.....

Name... ..
Designation

PROFORMA FOR QA DOCUMENTS RECEIPT CERTIFICATE

(TO BE ISSUED BY CQA&I)

CERTIFICATE NO. CCP-03

NAME OF PACKAGE:

**LETTER OF AWARD/
NOA/ CONTRACT NO.:**

NAME OF CONTRACTOR:

DATED:

Project:

This is to certify that the QA documents as per the list enclosed, in respect of the above mentioned LOA/ Contract has been received in line with the provisions of the Contract.

Signature

Date

Place.....

Name.....

Designation

PROFORMA FOR O&M MANUAL RECEIPT CERTIFICATE

(TO BE ISSUED BY ENGINEERING)

CERTIFICATE NO. CCP - 04

NAME OF PACKAGE:

**LETTER OF AWARD/
NOA/ CONTRACT NO.:**

NAME OF CONTRACTOR:

DATED:

Project :

This is to certify that we have received from the contractor all the necessary O&M Manuals in requisite number including the list of spare parts along with the names of vendors in respect of the above LOA/contract. The consolidated list of such manuals received is enclosed along with the distribution as marked on the list.

Signature

Date.....
Place.....

Name... ..
Designation.....

PROFORM FOR SCOPE COMPLETION CERTIFICATE

(TO BE ISSUED BY SITE ERECTION)

CERTIFICATE NO. CCP- 05

NAME OF PACKAGE:

**LETTER OF AWARD/
NOA/CONTRACT NO.:**

NAME OF CONTRACTOR:

DATED:

Project :

1. This is to certify that the scope of the above Contract has been completed in line with the contract read in conjunction with the following documents:
 1. Final Amendment No. _____ (As per CCP -01)
 2. Approved drawings including site run pipingschemes, if any.
 3. Approved Bill of Materials
 4. Material Dispatch Clearance Certificate (s)
 5. Measurement Book
 6. As Built Drawings
 7. Any other documents (specify)
2. It is further certified that the following have been supplied, as per the details given in the Contract Documents and the same have been taken over by Employer.
 1. Mandatory Spares
 2. Recommended Spares
 3. Special Tools & Tackles

Signature

Date

Place.....

Name.....

Designation

PROFORMA FOR LIQUIDATED DAMAGES FOR DELAY CERTIFICATE**(TO BE ISSUED BY SITE ERECTION/ REGIONAL OFFICE/ CORPORATE
CONTRACT SERVICES)****CERTIFICATE NO. CCP- 06****NAME OF PACKAGE:****LETTER OF AWARD/
NOA/ CONTRACT NO. :****NAME OF CONTRACTOR:****DATED:****Project:**

This is to certify that the issue regarding liquidated damages for delay as per the provisions of clause _____ of the above contract/ LOA has been resolved with the approval of the Competent authority vide reference _____ (copy enclosed).

Signature

Date

Name... ..

Place.....

Designation

Note: In respect of cases where LD for delay is settled by Corporate Contract Services (CS), this certificate will be issued by CS and where LD for delay is settled by the Site / Region, the same will be issued by the concerned Site/Regional Offices.

PROFORMA OF SHORTFALL IN EQUIPMENT PERFORMANCE CERTIFICATE

(TO BE ISSUED BY OS/SITE, AS APPLICABLE, FOR SITE PERFORMANCE TEST
AND BY CQA&I FOR SHOP TEST)

CERTIFICATE NO. CCP - 07

NAME OF PACKAGE:

**LETTER OF AWARD/
NOA/ CONTRACT NO.:**

NAME OF CONTRACTOR:

DATED:

PROJECT:

This is to certify that the following shortfall in equipment performance as compared to the guaranteed parameters have been assessed and agreed to with the contractor in respect of the above mentioned LOA/ Contract.

S.No	Guaranteed Parameter	Guaranteed value	Assessed Value	Shortfall, if any.	liquidated damages Annual
1	2	3	4	5	6

Further, it is also confirmed that liquidated damages for shortfall in equipment performance in respect of above Items, have been recovered fully from the contractor and no other dues are outstanding for shortfall in equipment performance.

Signature

Date

Place.....

Name.....

Designation

To be counter signed by Site Accounts.

Signature

Date.....

Place.....

Name.....

Designation

PROFORMA OF "MATERIAL RECONCILIATION" CERTIFICATE

**(TO BE ISSUED BY SITE ERECTION AND COUNTERSIGNED BY SITE MATERIALS
MANAGEMENT)**

CERTIFICATE NO. CCP- 08

NAME OF PACKAGE:

**LETTER OF AWARD/
NOA/ CONTRACT NO.:**

NAME OF CONTRACTOR:

DATED:

PROJECT:

This is to certify that the materials issued to the contractor in respect of the above mentioned LOA/Contract have been reconciled with the stipulations under the contract documents and no other recovery of material is pending with the contractor.

Signature

Date

Name... ..

Place.....

Designation

To be counter signed by materials management

Signature

Date

Name... ..

Place.....

Designation... ..

PROFORMA OF "PAYMENT RECONCILIATION" CERTIFICATE
(TO BE ISSUED BY SITE ACCOUNTS IN CASE OF INDIAN CONTRACTORS)

CERTIFICATE NO. CCP - 09

NAME OF PACKAGE:

**LETTER OF AWARD/
NOA/ CONTRACT NO.:**

NAME OF CONTRACTOR:

DATED:

PROJECT:

This is to certify that all the payments released to the contractor in respect of the above mentioned LOA/Contract have been reconciled with the provisions of the contract documents and statement of Accounts and or other Certificates of Contractor. It is observed that there are no recoveries pending under any of the items listed overleaf.

Signature

Date.....
Place.....

Name.....
Designation.....

Enclosure to CCP-09

The list of recoveries and claims as advised by site Erection Department should include all recoveries and claims on any account whatsoever, including the following:

1. Liquidated damages for delay.
2. Liquidated damages for shortfall in Performance as observed during shop-testing (by inspection deptt.)
3. Liquidated damages for shortfall in performance as observed during performance guarantee tests conducted at site and other site tests.
4. All recoveries /claims on account of variations/deviations to scope of contract permitted or otherwise taken place during execution of the contract as listed in certificate No. CCP.05 for contract closing (Certificate by site Erection for contract closing).
5. Recoveries on account of reconciliation of payments made under the contract.
6. All the claims against the contractor regarding clearance of materials from site and vacation of the premises allotted for site office, stores.
7. All claims in respect of Training/Transportation/Accommodation/Services provided by site in respect of above LOA/Contract.
8. Recoveries on account of settlement of insurance claims
9. Recoveries on account of reconciliation of materials issued to the Contractor.
10. All recoveries on account of demurrage, transportation, insurance premiums etc. and other recoveries as informed by T&CC group on account of port clearance, transportation etc.
11. All recoveries on account of wastage and scrap.
12. All recoveries/claims (if any) on account of maintenance of equipments.
13. All recoveries/claims (if any) on account of price variation.
14. All recoveries/claims (if any) on account of statutory dues paid on behalf of the Contractor by Employer.
15. Royalty charges.
16. All recoveries/ claims (if any) on account of hiring out of Employer's plant and equipment.
17. All recoveries/claims (if any) on account of water and electricity charges (if applicable).
18. Any other recoveries/claims against specific instructions.

**PROFORMA OF CERTIFICATE REGARDING LABOUR PAYMENTS AND
STATUTORY REQUIREMENTS TO BE FURNISHED BY CONTRACTOR.**

(TO BE ISSUED BY THE CONTRACTOR)

CERTIFICATE NO. CCP - 10

NAME OF PACKAGE:

**LETTER OF AWARD/
NOA/ CONTRACT NO. :**

NAME OF CONTRACTOR:

DATED:

PROJECT:

This is to certify that we have made all labour payments including PF Liabilities in respect of the above mentioned LOA/ Contract and no other payments in this regard is pending from us.

Further we confirm that all Statutory requirements have been complied with by us and in case any default is reported against us, we shall be solely responsible for the same.

Signature

Date

Name... ..

Place.....

Designation

**PROFORMA OF "NO DEMAND CERTIFICATE" BY CONTRACTOR (TO BE
ISSUED BY THE CONTRACTOR)**

CERTIFICATE NO. CCP-11

NAME OF PACKAGE:

**LETTER OF AWARD/ NOA/
CONTRACT NO.:**

NAME OF CONTRACTOR:

DATED:

PROJECT:

We, M/s (Contractor) do hereby acknowledge and confirm that we have received the full and final payment due and payable to us from Employer in respect of our aforesaid LOA/Contract No..... dated.....including amendments if any, issued by Employer, to our entire satisfaction and we further confirm that we have no claim whatsoever pending with Employer under the said Contract.

Notwithstanding any protest recorded by us in any correspondence document, measurement books, and/or final bills etc., we waive all our rights to lodge any claim or protest in future under this contract.

We are issuing this "NO DEMAND CERTIFICATE" in favour of Employer with full knowledge and with our free consent without any undue influence, misrepresentation, coercion etc.

Signature

Date
Place.....

Name... ..
Designation

(Company Common Seal)

(This certificate shall be accompanied by the Power of attorney of the signatory)

**PROFORMA OF CERTIFICATE FOR COMPLETION OF WARRANTY PERIOD (TO
BE ISSUED BY SITE ERECTION)**

CERTIFICATE NO. CCP-12

NAME OF PACKAGE:

**LETTER OF AWARD/
NOA/ CONTRACT NO.:**

NAME OF CONTRACTOR:

DATED:

PROJECT:

This is to certify that the warranty period for the above mentioned LOA/Contract has been completed in line with the provisions of the contract.

Date
Place.....

Signature

Name... ..
Designation

**PROFORMA OF "CERTIFICATE FOR RETURN OF BGs/ INDEMNITY BONDS
ETC."**

(TO BE ISSUED BY SITE ACCOUNTS)

CERTIFICATE NO.
CCP-13

NAME OF PACKAGE:

**LETTER OF
AWARD/NOA/
CONTRACT NO.:**

NAME OF CONTRACTOR:

DATED:

PROJECT:

This is to certify that all the *Bank Guarantee/ Indemnity bonds/ Insurance policies/ Collaborator's or Associate's Guarantee received for the above mentioned LOA/ Contract have been returned in original to the contractor.

Signature

Date.....
Place.....

Name.....
Designation.....

To

Dear Sirs,

(TO BE FILLED IN CAPITAL LETTERS)

1. NAME OF THE BENEFICIARY

[illegible]

2. ADDRESS

[illegible]

3. TELEPHONE NO. (WITH STD CODE)

[illegible]

4. BANK PARTICULARS

(A) BANK NAME

[illegible]

(B) BANK TELEPHONE NO. (WITH STD CODE)

[illegible]

(C) BRANCH ADDRESS

PIN CODE																

(D) BANK FAX NO (WITH STD CODE)

[illegible]

(E) BRANCH CODE

[illegible]

(F) 9 DIGIT MICR CODE OF THE BANK BRANCH (ENCLOSE COPY OF A CANCELLED CHEQUE)

[illegible]

(G) IFSC CODE

[illegible]

(H) BANK ACCOUNT NUMBER

[illegible]

(I) BANK ACCOUNT TYPE (TICK ONE)

SAVING	CURRENT	LOAN	CASH CREDIT	OTHERS

IF OTHERS, SPECIFY

[illegible]

5. PERMANENT ACCOUNT NUMBER (PAN) (ENCLOSE COPY)

[illegible]

6. E-MAIL ADDRESS FOR INTIMATION REGARDING RELEASE OF PAYMENTS

[illegible]

I/We hereby declare that the particulars given above are correct and complete. If the transaction is delayed or credit is not affected at all for reasons of incomplete or incorrect information, I/We would not hold the Employer responsible. We have enclosed document as mentioned at Sl. No. 4(F) and 5 above.

SIGNATURE

DATE

(AUTHORISED SIGNATORY)

Name:

OFFICIAL STAMP

BANK CERTIFICATION:

It is certified that above mentioned beneficiary holds a bank account no.
with our branch and the Bank particulars mentioned above are correct.

SIGNATURE

DATE

(AUTHORISED SIGNATORY)

Authorization No. :

Name:

OFFICIAL STAMP

BG forwarding letter from Bank to Unified Treasury in Bank's letterhead

Deleted

Damodar Valley Corporation

(Established by the ACT XIV of 1948)



BIDDING DOCUMENTS

FOR

EPC PACKAGE

FOR

KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

SECTION - VII

BOOK 3 OF 3 (PART-2)

BIDDING DOCUMENT NO. : DVC/C&M/Engineering/KTPS (2X800 MW)/EPC/IPHB

BIDDING DOCUMENTS
FOR
EPC PACKAGE
FOR
KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

SECTION – VII
BOOK 3 OF 3 (PART-2)

BIDDING DOCUMENT NO.: DVC/C&M/Engineering/KTPS (2X800 MW)/EPC/IPHB

(This document is meant for the exclusive purpose of bidding against this Bid Document No. / Specification and shall not be reproduced or otherwise used for purposes other than that for which it is specifically issued).

TABLE OF FORMS AND PROCEDURES

Sl.No.	Description
1.	(i) Bid Form (Techno-Commercial Bid) along with Attachments [enclosed as Section-VII, Book 1 of 3] (ii) Bid Form (Price Bid) along with Attachments & Price Schedules [enclosed as Section-VII, Book 2 of 3] <i>Book 3 of 3 consisting of the following:</i> <i>Book 3 of 3 [Part 1]</i>
2.	Bid Security Form - Bank Guarantee
2a.	Bid Security Form Letter of Credit- Not Applicable
2b.	Bid Security Form – Insurance Surety Bond
3.	(a) Form of Notification by the Employer to the Bidder (b) Form of Sight Draft
4.	Forms of Notification of Award
5.	Form of Contract Agreement
6.	Performance Security Forms- Bank Guarantee/Insurance Surety Bond
6a.	Performance Security Form for Phased Manufacturing Programme (PMP)
7.	(i) Bank Guarantee Form for Advance Payment (Supply-FOB/Ex-works)
7.	(ii) Bank Guarantee Form for Advance Payment (Installation Services / Civil / Structural Works)
8.	Form of Completion Certificate
9.	Form of Operational Acceptance Certificate
10.	Form of Trust Receipt
11.	Forms of Indemnity Bond (3 Nos.)
12.	Form of Authorization Letter
13.	Forms of Deed of Joint Undertaking (DJU) [Book 3 of 3, Part-2]
14.	Form of Bank Guarantee/Insurance Surety Bond by Executants of DJUs other than Contractor
15.	Form of Bank Guarantee/Insurance Surety Bond Verification Check List
16.	Form of Validity Extension of Bank Guarantee/Insurance Surety Bond
17.	Form of Indemnity Bond (Removal/Disposal of Scrap/Surplus Material)

18. Form of Contract Closing Certificate

Note : Sl. No. 2 to 18 (except Sl. No. 13) are in Book 3 of 3 (Part-1) and Sl. No. 13 (DJU Forms) is in Book 3 of 3, (Part-2)

13. FORMS OF DEED OF JOINT UNDERTAKING

ROUTE-1 (FOR STEAM GENERATOR AND AUXILIARIES):

S.No.	DJU Format No.	Executants of DJU
1	13A11	Applicable for Bidder/Bidder's Associate as Qualified Steam Generator Manufacturer (QSGM) alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
2	13A12	Applicable for Bidder/Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13A13	Applicable for Bidder/Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13A14	Applicable for Bidder/Bidder's Associate as QSGM [Where Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13A15	Applicable for Bidder/Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13A16	Applicable for Bidder/Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F1	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets

ROUTE-1 (FOR STEAM TURBINE GENERATOR AND AUXILIARIES):

S.No.	DJU Format No.	Executants of DJU
1	13A21	Applicable for Bidder/Bidder's Associate as Qualified Steam Turbine Generator Manufacturer (QSTGM) alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
2	13A22	Applicable for Bidder/Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13A23	Applicable for Bidder/Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13A24	Applicable for Bidder/Bidder's Associate as QSTGM [Where Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13A25	Applicable for Bidder/Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13A26	Applicable for Bidder/Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F2	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets

ROUTE-2 (FOR STEAM GENERATOR AND AUXILIARIES):

Not Used

ROUTE-2 (FOR STEAM TURBINE GENERATOR AND AUXILIARIES):

Not Used

ROUTE-3 (FOR STEAM GENERATOR AND AUXILIARIES):

S.No.	DJU Format No.	Executants of DJU
1	13C11	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM), Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
2	13C12	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13C13	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13C14	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM) [Where Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13C15	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13C16	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F1	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets

ROUTE-3 (FOR STEAM TURBINE GENERATOR AND AUXILIARIES) :

S.No.	DJU Format No.	Executants of DJU
1	13C21	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM), Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
2	13C22	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13C23	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13C24	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13C25	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13C26	Applicable for Bidder/Bidder's Associate as Indian Subsidiary of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F2	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets

ROUTE-4 (FOR STEAM GENERATOR AND AUXILIARIES):

S.No.	DJU Format No.	Executants of DJU
1	13D11	Applicable for Bidder/Bidder's Associate as Indian JV of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM), Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
2	13D12	Applicable for Bidder/Bidder's Associate as Indian JV of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13D13	Applicable for Bidder/Bidder's Associate as Indian JV of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13D14	Applicable for Bidder/Bidder's Associate as Indian JV of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM) [Where Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13D15	Applicable for Bidder/Bidder's Associate as Indian JV of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13D16	Applicable for Bidder/Bidder's Associate as Indian JV of QSGM alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F1	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets

ROUTE-4 (FOR STEAM TURBINE GENERATOR AND AUXILIARIES):

S.No.	DJU Format No.	Executants of DJU
1	13D21	Applicable for Bidder/Bidder's Associate as Indian JV of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM), Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
2	13D22	Applicable for Bidder/Bidder's Associate as Indian JV of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13D23	Applicable for Bidder/Bidder's Associate as Indian JV of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13D24	Applicable for Bidder/Bidder's Associate as Indian JV of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13D25	Applicable for Bidder/Bidder's Associate as Indian JV of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13D26	Applicable for Bidder/Bidder's Associate as Indian JV of QSTGM alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F2	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets

ROUTE-5 (FOR STEAM GENERATOR AND AUXILIARIES):

S.No.	DJU Format No.	Executants of DJU
1	13E11	Applicable for Bidder/Bidder's Associate as Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Generator Manufacturer (QSGM), Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
2	13E12	Applicable for Bidder/Bidder's Associate as Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13E13	Applicable for Bidder/Bidder's Associate Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13E14	Applicable for Bidder/Bidder's Associate Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Generator Manufacturer (QSGM) [Where Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13E15	Applicable for Bidder/Bidder's Associate Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13E16	Applicable for Bidder/Bidder's Associate Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Generator Manufacturer (QSGM) [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F1	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets

ROUTE-5 (FOR STEAM TURBINE GENERATOR AND AUXILIARIES):

S.No.	DJU Format No.	Executants of DJU
1	13E21	Applicable for Bidder/Bidder's Associate Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM), Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
2	13E22	Applicable for Bidder/Bidder's Associate Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13E23	Applicable for Bidder/Bidder's Associate Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13E24	Applicable for Bidder/Bidder's Associate Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13E25	Applicable for Bidder/Bidder's Associate Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13E26	Applicable for Bidder/Bidder's Associate Indian Company who holds atleast 51% equity in Joint venture Company alongwith Qualified Steam Turbine Generator Manufacturer (QSTGM) [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)], Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F2	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets

ROUTE-6(FOR STEAM GENERATOR AND AUXILIARIES):

FORMS ARE AT THE END OF BOOK

S.No.	DJU Format No.	Executants of DJU
1	13F1	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets
2	13F11	Applicable for Bidder, Bidder's Associate as Qualified Steam Generator Manufacturer (QSGM) alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13F12	Applicable for Bidder, Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13F13	Applicable for Bidder, Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13F14	Applicable for Bidder, Bidder's Associate as QSGM [Where Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13F15	Applicable for Bidder, Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F16	Applicable for Bidder, Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
8	13F17	Applicable for Bidder/Bidder's Associate as "Indian SG Manufacturer" alongwith QSGM meeting clause 1.2.1 of item no. 4 of Bid Data Sheets

ROUTE-6 (FOR STEAM TURBINE GENERATOR AND AUXILIARIES):

FORMS ARE AT THE END OF BOOK

S.No.	DJU Format No.	Executants of DJU
1	13F2	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets
2	13F21	Applicable for Bidder, Bidder's Associate as Qualified Steam Turbine Generator Manufacturer (QSTGM) alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13F22	Applicable for Bidder, Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13F23	Applicable for Bidder, Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13F24	Applicable for Bidder, Bidder's Associate as QSTGM [Where Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13F25	Applicable for Bidder, Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F26	Applicable for Bidder, Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
8	13F27	NOT USED

ROUTE-7(FOR STEAM GENERATOR AND AUXILIARIES):

S.No.	DJU Format No.	Executants of DJU
1	13G11	Applicable for Bidder, Bidder's Associate as Qualified Steam Generator Manufacturer (QSGM) alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
2	13G12	Applicable for Bidder, Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13G13	Applicable for Bidder, Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13G14	Applicable for Bidder, Bidder's Associate as QSGM [Where Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13G15	Applicable for Bidder, Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13G16	Applicable for Bidder, Bidder's Associate as QSGM [Where QSGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of SG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F1	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets

ROUTE-7 (FOR STEAM TURBINE GENERATOR AND AUXILIARIES):

S.No.	DJU Format No.	Executants of DJU
1	13G21	Applicable for Bidder, Bidder's Associate as Qualified Steam Turbine Generator Manufacturer (QSTGM) alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
2	13G22	Applicable for Bidder, Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
3	13G23	Applicable for Bidder, Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
4	13G24	Applicable for Bidder, Bidder's Associate as QSTGM [Where Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
5	13G25	Applicable for Bidder, Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (iii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
6	13G26	Applicable for Bidder, Bidder's Associate as QSTGM [Where QSTGM is a Holding Company as per Note 4 (ii) of Clause 1.0.0, Item 4 of BDS and Manufacturing of STG sets is carried out by another subsidiary of Indian subsidiary / JV Company as per Note 8 of Clause 1.0.0, Item 4 of Bid Data Sheets (BDS)] alongwith Indian Subsidiary/JV Company of QSTGM and Other Promoter having 25% or more equity in Indian Subsidiary/JV Company
7	13F2	Applicable for Bidder/Bidder's Associate as "Indian Subsidiary Company/ JV Company/ Indian Manufacturing Company" meeting clause 1.6.1 of item no. 4 of Bid Data Sheets

(FOR STEAM GENERATOR MANUFACTURER WITH TECHNOLOGY TIE-UP FOR VARIABLE PRESSURE DESIGN AS PER NOTE 5 OF CLAUSE 1.0.0, ITEM-4 OF BDS):

S.No.	DJU Format No.	Executants of DJU
1	13H1	Applicable for Bidder (QSGM) alongwith VARIABLE PRESSURE DESIGN TECHNOLOGY OWNER (LICENSOR)

S.No.	DJU Format No.	Executants of DJU
1	13H2	Applicable for Bidder, Bidder Associate (QSGM) alongwith VARIABLE PRESSURE DESIGN TECHNOLOGY OWNER (LICENSOR)

(FOR BIDDER AND ASSOCIATE PROJECT MANAGEMENT ORGANIZATION AS PER CLAUSE 4.0.0, ITEM-4 OF BDS):

S.No.	DJU Format No.	Executants of DJU
1	13I1	BIDDER AND ASSOCIATE PROJECT MANAGEMENT ORGANIZATION

(FOR BIDDER AND ASSOCIATE ARCHITECT ENGINEERING FIRM AS PER CLAUSE 5.0.0, ITEM-4 OF BDS):

S.No.	DJU Format No.	Executants of DJU
1-4	13I2, 13I2A, 13I2B, 13I2C	BIDDER AND ASSOCIATE ARCHITECT ENGINEERING FIRM

S.No.	Letter Format No.	Letter as per format to be submitted by Bidder as per QR
1	13J	Format of Letter to ensure satisfactory performance.

Note: Bidder shall necessarily be an executants in each applicable DJU

DJU FORMS
FOR
KODERMA THERMAL POWER STATION PHASE-II
(2x800MW)

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR
AND AUXILIARIES AS PER CLAUSE 1.1.3, ITEM 4.0 OF BID DATASHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, *THE QUALIFIED STEAM GENERATOR MANUFACTURER, THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR SETS IN INDIA AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Qualified Steam Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company*/ Indian Manufacturing Company* (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.1.1 (A), item 4.0 of Bid Data Sheet should have formed an Indian Subsidiary Company/Joint Venture Company for manufacturing of supercritical Steam Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and furnish a Deed of Joint Undertaking.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS and, shall associate with **EITHER** i) *Qualified Steam

Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (*Bidder/*Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to steam generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to steam generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
3. We, the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and ratings specified in the Contract(s)) in the

form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).

4. We, the Contractor, *the Qualified Steam Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
 5. In case of any breach of the Contract(s) committed by the Contractor, we *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to steam generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
 - 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).
- The liability of *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.
6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
 - b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:

- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buck stay system etc.
- (ii) Selection of auxiliaries for all Steam Generators
- (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
- (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Contractor / Indian Manufacturing Company shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and

the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor *and *the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

7. We, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contract or in terms of the Contract(s).

8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

9. Any dispute that may arise between the Employer and the Contractor or Indian Subsidiary/ Joint Venture Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The

language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.....

.....
(Official Address)

For M/s
(BIDDER/ CONTRACTOR)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

WITNESS :

1.....

.....
(Official Address)

For M/s.....
(*the Qualified Steam Generator
Manufacturer)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS :

1.....

.....
(Official Address)

For M/s.....
(Indian Manufacturing Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*OTHER PROMOTER)

WITNESS :

1.....

.....

(Official Address)

.....

(Signature of the Authorised
Representative)

Name.....

Designation.....

Common Seal of the

Company.....

Notes:

- i) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- ii) ***Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner airfans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system (Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, (HOLDING COMPANY WHO ALONG WITH ITS SUBSIDIARIES), *THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONG WITH ITS SUBSIDIARIES), THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor"/ Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "the Qualified Steam Generator Manufacturer/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company*/ Indian Manufacturing Company* (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b) and note 4 iii) of clause 1.0.0, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements stipulated in clause 1.1.1 (A), item 4.0 of Bid Data Sheet should have set up an Indian Subsidiary Company/Joint Venture Company for manufacturing of supercritical Steam Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (*Bidder/*Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to steam generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to steam generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).

3. We, the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
 4. We, the Contractor, *the Qualified Steam Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
 5. In case of any breach of the Contract(s) committed by the Contractor, we *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to steam generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
 - 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).
- The liability of *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.
6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).

- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buck stay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Contractor /Indian Manufacturing Company shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and

suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor *and *the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

7. We, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

9. Any dispute that may arise between the Employer and the Contractor or Indian Subsidiary/ Joint Venture Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority

for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR i.e. HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s.....
(*the Qualified Steam Generator
Manufacturer i.e. HOLDINGCOMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....

Common Seal of the
Company.....

For M/s.....
(*OTHER PROMOTER)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Note:

- (i) **The Bidder/*the Qualified Steam Generator Manufacturer shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, *the Bidder/*the Qualified Steam Generator Manufacturer shall arrange for signing of DJU and bank guarantees by all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, before the change in management control actually occurs. Such bank guarantees to be furnished by the Holding Company and entities lending support for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.**
- (ii) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- (iii) ***Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner airfans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.

Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system (Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above
and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator
& its auxiliaries including boiler protection and burner management
system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and
Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (*HOLDING COMPANY WHO ALONG WITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), *THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONG WITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF THE HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY FOR MEETING THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS, THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2 (a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor"/ Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at (hereinafter called the "the Qualified Steam Generator Manufacturer /Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (the Subsidiary(ies) of the bidder/*the Qualified Steam Generator Manufacturer who are lending strength/ experience to the bidder/*the Qualified Steam Generator Manufacturer for meeting the requirements stipulated in clause 1.1.1 (A) and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company*/ Indian Manufacturing Company* (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b) and note 4 ii) of clause 1.0.0, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements stipulated in clause 1.1.1 (A), item 4.0 of Bid Data Sheet should have set up an Indian Subsidiary Company/Joint Venture Company for manufacturing of supercritical Steam Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (*Bidder/*Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to steam generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the

bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance the contract for the scope related to steam generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
3. We, the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know- how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
4. We, the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies) do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
5. In case of any breach of the Contract(s) committed by the Contractor, we *the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to steam generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we *the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buck stay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian

Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/ acceptance.

- e) The Indian Manufacturing Company / Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor *and *the Qualified Steam Generator Manufacturer, Subsidiary(ies) shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
7. We, the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

9. Any dispute that may arise between the Employer and the Contractor or Indian Subsidiary/ Joint Venture Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and *the Qualified Steam Generator Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies) the Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR i.e. HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised Representative)

.....
(Official Address)

Name.....

Designation.....

Common Seal of the
Company

For M/s.....
(*the Qualified Steam Generator
Manufacturer i.e. HOLDINGCOMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....

Common Seal of the
Company.....

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING
COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDINGCOMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(Indian Joint Venture/ Indian Subsidiary
Company)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)

.....
(Official Address)

Name.....
Designation.....

Common Seal of the
Company.....

For M/s.....
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)

.....
(Official Address)

Name.....
Designation.....
Common Seal of the
Company.....

Note:

- (i) The Holding Company shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiary(ies) lending strength / experience to the Holding Company for fulfilment of requirement of clause 1.1.1A, item 4.0 of Bid Data Sheet, the bidder shall arrange for separate on demand bank guarantees from all such Subsidiary(ies) for an amount aggregating 0.6% of the total contract price of the EPC Package divided equally among them before the change in management control actually occurs.
- (ii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.
- (iii) *Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner airfans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system (Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above and
Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 AND NOTE *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, *THE QUALIFIED STEAM GENERATOR MANUFACTURER, THE INDIAN *SUBSIDIARY/*JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2 (a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ *JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 AND *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ *JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2 (a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Qualified Steam Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company*/ Indian Manufacturing Company* (hereinafter jointly called the "**OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.1.1 (A), item 4.0 of Bid Data Sheet have set up an Indian Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and furnish a Deed of Joint Undertaking. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, shall associate with i) *Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (*Bidder/*Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS and M/s.....is the Subsidiary Company of above manufacturing company as per note 8.0 of Clause 1.0.0 of Item 4.0 of BDS.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to steam generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (as per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract with regard to implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance the contract for the scope related to steam generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the saidContract(s).
3. We, the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per theContract(s).
4. We, the Contractor, *the Qualified Steam Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
5. In case of any breach of the Contract(s) committed by the Contractor, we *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to steam generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause ofSCC).

The liability of *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buckstays etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if

manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/ acceptance.

- e) The Indian Manufacturing Company / Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and *the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
7. We, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in QualifyingRequirementsstipulatedatItem4.0ofBDSshallbefurnished.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

9. Any dispute that may arise between the Employer and the Contractor or Indian Subsidiary/ Joint Venture Company or Subsidiary of Indian Manufacturing Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.....

.....
(Official Address)

For M/s
(BIDDER/ CONTRACTOR)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s.....
(*the Qualified Steam Generator
Manufacturer)

WITNESS :

1.....

.....
(Official Address)

WITNESS :

1.....

.....
(Official Address)

WITNESS :

1.....

.....
(Official Address)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the
Authorised
Representative)

Name.....
Designation.....
Common Seal of the
Company.....

.....
For M/s.....
(Indian Manufacturing Company)

.....
(Signature of the
Authorised
Representative)

Name.....
Designation.....
Common Seal of the
Company.....

.....
For M/s.....
(Subsidiary Company of
Indian Manufacturing Company)

.....
(Signature of the
Authorised
Representative)

Name.....
Designation.....
Common Seal of the
Company.....

.....

For
M/s.....
.....
(PROMOTER
)

.....
(Signature of the
Authorised
Representative)

Name.....
Designation.....
Common Seal of the
Company.....

.....

Note: 1. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

2. * Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner airfans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system (Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above and
Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 AND NOTE 4 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (HOLDING COMPANY ALONG WITH ITS SUBSIDIARIES), *THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY ALONG WITH ITS SUBSIDIARIES), THE INDIAN *SUBSIDIARY/*JOINT VENTURE COMPANY, MEETING THE REQUIREMENT OF CLAUSE 1.1.2(a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2(a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at (hereinafter called the "the Qualified Steam Generator Manufacturer/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company*/ Indian Manufacturing Company* (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements stipulated in clause 1.1.1 (A), item 4.0 of Bid Data Sheet should have set up an Indian Subsidiary Company/Joint Venture Company for manufacturing of supercritical Steam Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (*Bidder/*Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, ... for manufacturing of supercritical Steam Generator sets whose *other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS and M/s.....is the Subsidiary Company of above manufacturing company as per note 8.0 of Clause 1.0.0 of Item 4.0 of BDS.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to steam generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased

Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance the contract for the scope related to steam generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
3. We, the Contractor, *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
4. We, the Contractor, *the Qualified Steam Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company as part of the technology transfer agreement.
5. In case of any breach of the Contract(s) committed by the Contractor, we *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to steam generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we *the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for

incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.

- e) The Indian Manufacturing Company / Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor *and *the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
7. We, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

***OTHER PROMOTER**

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

9. Any dispute that may arise between the Employer and the Contractor or Indian Subsidiary/ Joint Venture Company or Subsidiary of Indian Manufacturing Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and *the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR i.e. HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....

Common Seal of the
Company

For M/s.....
(*the Qualified Steam Generator
Manufacturer i.e. HOLDINGCOMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(Subsidiary Company of Indian
ManufacturingCompany)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

- Note: 1. The Bidder shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiaries lending strength / experience to the Holding Company for fulfilment of requirement of clause 1.1.1 (A), item 4.0 of Bid Data Sheet, the bidder shall arrange for signing of DJU and bank guarantees by all such subsidiaries lending strength / experience to the Holding Company for fulfilment of requirement of clause 1.1.1 (A), item 4.0 of Bid Data Sheet, before the change in management control actually occurs. Such bank guarantees to be furnished by the Holding Company and entities lending support for fulfilment of requirement of clause 1.1.1 (A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPCPackage.**
- 2. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- 3.* Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system (Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above and
Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 AND NOTE 4 & 8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (*HOLDING COMPANY WHO ALONG WITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), *THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONG WITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF THE HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY FOR MEETING THE REQUIREMENT OF CLAUSE 1.1.1(A) ITEM 4.0 OF BID DATA SHEETS, THE INDIAN *SUBSIDIARY/*JOINT VENTURE COMPANY, SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2(a)/1.1.2(b), ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor"/ Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at (hereinafter called the "the Qualified Steam Generator Manufacturer /Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (the Subsidiary(ies) of the bidder/*the Qualified Steam Generator Manufacturer who are lending strength/ experience to the bidder/*the Qualified Steam Generator Manufacturer for meeting the requirements stipulated in clause 1.1.1 (A) and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company*/ Indian Manufacturing Company* (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing

Company", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements stipulated in clause 1.1.1 (A), item 4.0 of Bid Data Sheet should have set up an Indian Subsidiary Company/Joint Venture Company for manufacturing of supercritical Steam Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (*Bidder/*Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS and M/s.....is the Subsidiary Company of above manufacturing company as per note 8.0 of Clause 1.0.0 of Item 4.0 of BDS.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to steam generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)(As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND WHEREAS the Bidder, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
3. We, the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
4. We, the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies) do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company as part of the technology transfer agreement.
5. In case of any breach of the Contract(s) committed by the Contractor, we *the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to steam generator and auxiliaries, including its satisfactory thermal

performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we *the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /

Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
 - e) The Indian Manufacturing Company / Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor *and *the Qualified Steam Generator Manufacturer, Subsidiary(ies) shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
7. We, the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package

awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished. *OTHER PROMOTER

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

9. Any dispute that may arise between the Employer and the Contractor or *the Qualified Steam Generator Manufacturer, Subsidiary(ies) or Indian Subsidiary/ Joint Venture Company or Subsidiary of Indian Manufacturing Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Generator Manufacturer, Subsidiary(ies) the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR i.e. HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s.....
(*the Qualified Steam Generator Manufacturer i.e.
HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised

.....
(Official Address)

Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*Subsidiary Company of
Indian Manufacturing Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

- Note: 1. *The Holding Company shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiary(ies) lending strength / experience to the Holding Company for fulfilment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the bidder shall arrange for separate on demand bank guarantees from all such Subsidiary(ies) for an amount aggregating 0.6% of the total contract price of the EPC Package divided equally among them before the change in management control actually occurs.***
- 2. *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.***
- 3. **Bidder to strike out, whichever is not applicable.***

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system (Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above and
Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & controls etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR
AND AUXILIARIES AS PER CLAUSE *1.1.3/*1.3.2/*1.4.2/*1.5.2/*1.6.2/*1.7.3,
ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR AND THE
“INDIAN SUBSIDIARY COMPANY/ JOINT VENTURE COMPANY/ INDIAN MANUFACTURING
COMPANY” AS SPECIFIED UNDER CLAUSE 1.6.1 OF ITEM NO. 4 OF BDS FOR SUCCESSFUL
PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES**

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s

..... a Company incorporated under having its
Registered Office at (hereinafter called the "Bidder/Contractor", which expression
shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its
Registered Office at created for manufacturing of supercritical Steam Generators
in India (hereinafter called the "Indian Manufacturing Company / Associate", which expression shall include
its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV
of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which
expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site,
construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package
for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)** (hereinafter referred to as "Plant")
vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/I PHB**

AND WHEREAS Clause ***1.1.3/*1.3.2/*1.4.2/*1.5.2/*1.6.2/*1.7.3**, Item 4.0 of Bid Data Sheets (BDS) of
bidding documents stipulates that the bidder, shall furnish a Deed of Joint Undertaking executed by him
and the Indian Manufacturing Company who meets the requirement of 1.6.1 & 3.0.0 of item no. 4 of BDS
for Steam Generator sets and shall source the Steam Generator Sets from the qualified associate.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid
by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**,
against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/I PHB**.

AND WHEREAS the Bidder and the Indian Manufacturing Company are required to jointly execute and
furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and
bound unto the Employer for the successful performance of the contract for the scope related to steam
generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW) (As per
Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and
characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into
a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder and the Indian Manufacturing Company are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor and the Indian Manufacturing Company do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to steam generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we "Indian Manufacturing Company", do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to steam generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we "Indian Manufacturing Company" and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Indian Manufacturing Company hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor and the Indian Manufacturing Company hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Indian Manufacturing Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Indian Manufacturing Company for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Indian Manufacturing Company covered under this Deed of Joint Undertaking, nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Indian Manufacturing Company and Contractor.
3. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the "Indian Manufacturing Company" shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the "Indian Manufacturing Company" shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the EPC
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the "Indian Manufacturing Company" shall extend our quality surveillance/ supervision/ quality control during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the "Indian Manufacturing Company" for successful commissioning and performance of the Steam Generators and auxiliaries, the Indian Manufacturing Company shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the "Indian Manufacturing Company" will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the "Indian Manufacturing Company" will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries.
- e) The Contractor / Indian Manufacturing Company shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Indian Manufacturing Company's design and to the Indian Manufacturing Company's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Indian Manufacturing Company's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of the Indian Manufacturing Company before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the "Indian Manufacturing Company" shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts

directly to the Employer and the Contractor and the Indian Manufacturing Company shall promptly carry out all corrective measures and modifications (as suggested by the Indian Manufacturing Company and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Indian Manufacturing Company shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

4. We the Contractor and the Indian Manufacturing Company do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
5. We the Contractor and the Indian Manufacturing Company do hereby declare, undertake and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the Contract(s).
6. We, the Contractor and the Indian Manufacturing Company do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Company manufacturing super critical Steam Generators as per the Contract(s).
7. We, the Contractor and the Indian Manufacturing Company, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the "Indian Manufacturing Company" as part of the technology transfer agreement.
8. The Contractor and the Indian Manufacturing Company will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
9. We, the Contractor and the Indian Manufacturing Company do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor and "Indian Manufacturing Company" do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
10. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/

component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

11. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

12. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor and the Indian Manufacturing Company through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR)

WITNESS :

1.

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name
Designation.....
Common Seal of the Company.....

Notes:

- i) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- ii) ***Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Stem Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up& circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.

Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system(Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.2.2, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

NOT USED

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A), *THE INDIAN SUBSIDIARY/ *JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)and

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.3.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.3.1(a), item 4.0 of Bid Data Sheet as Indian Subsidiary Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company.

*AND WHEREAS clause 1.3.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Turbine Generator Manufacturer who meets the requirement of

Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.3.2 item 4 of BDS.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS whose *other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " *OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated in India under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose *OTHER PROMOTER having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to steam generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER

PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to steam generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the *OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).

- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and

suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

4. We the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know- how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....

Common Seal of the
Company.....

For M/s
(Qualified Steam Generator Manufacturer)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- i) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- ii) ***Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner airfans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system (Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above and
Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.3.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.3.1(a), item 4.0 of Bid Data Sheet as Indian Subsidiary Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Note 4 to Clause 1.0.0} and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding

Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.3.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries)} meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS whose other *OTHER PROMOTER having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called "OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)..... as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose *OTHER PROMOTER having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we

shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.

2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the *OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in

certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know- how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability

period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....

(Bidder / Contractor)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(Qualified Steam Generator Manufacturer
/ Holding Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian *Subsidiary / JV / Manufacturing
Company Manufacturing Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- (i) ***However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank***

guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.

- (ii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.
- (iii) *Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economizer inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner airfans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system (Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above and
Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (Subsidiary(ies) of the Holding company who are lending strength/ experience to the holding company for meeting the requirements stipulated in clause 1.1.1 and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the

EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS Clause 1.3.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.3.1(a), item 4.0 of Bid Data Sheet as Indian Subsidiary Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Note 4 to Clause 1.0.0}, Subsidiary(ies) and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.3.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries)}, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS whose *Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose *other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking

and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the *OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, Subsidiary(ies) and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non- performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER

PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators.
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant.
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company /which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the

Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for MAIN PLANT Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of

this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(Qualified Steam Generator Manufacturer
/ Holding Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 1 OF HOLDINGCOMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDINGCOMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)

.....
(Official Address)

Name.....

Designation.....

Common Seal of the
Company

For M/s

(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....

(Signature of the Authorised
Representative)

Name.....

.....
(Official Address)

Designation.....

Common Seal of the
Company

*For M/s.....

(Indian Manufacturing Company)

WITNESS:

1.....

.....

(Signature of the Authorised
Representative)

Name.....

.....
(OfficialAddress)

Designation.....

Common Seal of the
Company.....

For M/s

(*OTHER PROMOTER)

WITNESS:

1.....

.....

(Signature of the Authorised
Representative)

Name.....

.....
(Official Address)

Designation.....

Common Seal of the
Company

Note:

- (i) ***However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.***

- (ii) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- (iii) ***Bidder to strike out, whichever is not applicable.**
Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans(If applicable)
- Aux PRDS and auxiliary steam piping
- Start up&circulationsystem,
- Air heaters &SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator

- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system(Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above and
Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2 AND NOTE *8 OF CLAUSE 1.0.0 OF ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA, SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)and

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS Clause 1.3.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.3.1(a), item 4.0 of Bid Data Sheet as Indian Subsidiary Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.3.1 (b), item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.3.2 and note

*8, item 4 of BDS. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS, directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose *Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose *other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable

Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, the Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the *OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or

obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the

Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.

- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
- 4. We the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
 - 5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
 - 6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).

7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International

Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.....

.....
(Official Address)

For M/s.....
(Bidder / Contractor)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

1.WITNESS:

.....
(Signature, Name & Address)

For M/s.....
(Qualified Steam Generator Manufacturer)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

WITNESS :

1.....

.....
(Official Address)

*For M/s.....
(Indian Manufacturing Company)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the

Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(Subsidiary Company of Indian Manufacturing Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:1. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

2. *Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Equipment Cooling Water System

Plant Utilities including,

- Compressed air system (Common system)

Handling system for all equipments indicated above

Electrical systems including motors of all Auxiliaries indicated above and
Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2 AND NOTE *4 & *8 OF CLAUSE 1.0.0 OF ITEM 4.0
OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA, SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF

**.....
COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES**

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the

EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.3.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.3.1(a), item 4.0 of Bid Data Sheet as Indian Subsidiary Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Note 4 to Clause 1.0.0} and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.3.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries)}, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS, directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHERPROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable

Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, the Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the *OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to

time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
 - e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India

in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).

6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later.

The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

For M/s
(Qualified Steam Generator Manufacturer/Holding Company)

WITNESS :

1.....

.....

.....
(Signature of the Authorised Representative)
Name.....

(Official Address)

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)

.....

(OfficialAddress)

Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)

.....

(Official Address)

Name.....

Designation.....
Common Seal of the
Company

For M/s
(Subsidiary Company of Indian Manufacturing Company)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)

.....

(Official Address)

Name.....

Designation.....
Common Seal of the
Company

Note: 1. However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.

2. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

3.* Bidder to strike out, whichever is not applicable.
Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)

- Elevators for Steamgenerator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2 AND NOTE *4 & *8 OF CLAUSE 1.0.0 OF ITEM 4.0
OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA, SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 AND THE *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (Subsidiary(ies) of the Holding company who are lending strength/ experience to the holding company for meeting the requirements stipulated in clause 1.1.1 and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian

Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.3.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.3.1(a), item 4.0 of Bid Data Sheet as Indian Subsidiary Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Note 4 to Clause 1.0.0} and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.3.1 (b) and note *8 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS}, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS, directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHERPROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
 - b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators

- (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
- (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the

Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

4. We the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the saidContract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the saidContract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of theContract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS :

1.....

.....
(Signature of the Authorised Representative)

.....

Name.....

(Official Address)

Designation.....
Common Seal of the
Company.....

For M/s

(Qualified Steam Generator Manufacturer/Holding Company)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)

.....
(OfficialAddress)

Name.....
Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....

(Official Address)

Designation.....
 Common Seal of the
 Company

*For M/s.....
 (Indian Manufacturing Company)

WITNESS :

1.....

.....
 (Signature of the Authorised
 Representative)
 Name.....
 Designation.....
 Common Seal of the
 Company.....

.....

(OfficialAddress)

For M/s
 (OTHER PROMOTER)

WITNESS:

1.....

.....
 (Signature of the Authorised
 Representative)
 Name.....

.....

(Official Address)

Designation.....
 Common Seal of the
 Company

*For M/s
 (Subsidiary Company of Indian Manufacturing Company)

WITNESS:

1.....

.....
 (Signature of the Authorised
 Representative)
 Name.....

.....

(Official Address)

Designation.....
 Common Seal of the
 Company

Note: 1. However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be

furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.

2. *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.*

3.* *Bidder to strike out, whichever is not applicable.*
Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,

- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & controls etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s a Company, other than the Qualified Steam GeneratorManufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)and

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*AND WHEREAS Clause 1.4.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.4.1(a), item 4.0 of Bid Data Sheet as Indian Joint Venture Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Indian Manufacturing Company.

*AND WHEREAS clause 1.4.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Turbine Generator Manufacturer who meets the requirement

of Clause 1.4.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.4.2 item 4 of BDS.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Joint Venture Company (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.4.1 (a) and 3.0.0, Item 4.0 of BDS whose *Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose *other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.

2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and

auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).

- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company / Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and

demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

4. We the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract

Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished by the Contractor and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....

Common Seal of the
Company.....

For M/s
(Qualified Steam Generator Manufacturer)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- i) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- ii) ***Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.

- Fuel oil pressurizing system (Commonsystem)
- Elevators for Steamgenerator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation andCladding
- Other systems like tools & tackles etc. as specified.

Y Pipingincluding,

- Power cyclepiping
- Low pressurepiping
- Equipment cooling watersystem
- Boiler fillsystem

Y Equipment Cooling WaterSystem

Y Plant Utilitiesincluding,

- Compressed air system(Commonsystem)

Y Handling system for all equipments indicatedabove

Y Electrical systems including motors of all Auxiliaries indicated above and ElectricActuators

- Power & ControlCable
- Earthing, Lightningprotection
- Electrical systems asrequired.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & controletc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

.
*AND WHEREAS Clause 1.4.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.4.1(a), item 4.0 of Bid Data Sheet as Indian Joint Venture Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Note 4 to Clause 1.0.0} and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding

Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.4.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.4.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries), meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Joint Venture Company (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.4.1 (a) and 3.0.0, Item 4.0 of BDS whose other Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract with regard to implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint

Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.

2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company / Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in

certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800MW under the Contractor completion of Phased Manufacturing

Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(Qualified Steam Generator Manufacturer
/ Holding Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

Note:

- (i) ***However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of***

requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.

(ii) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**

(iii) ***Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.

- Fuel oil pressurizing system (Commonsystem)
- Elevators for Steamgenerator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (Subsidiary(ies) of the Holding company who are lending strength/ experience to the holding company for meeting the requirements stipulated in clause 1.1.1 and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the

EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS Clause 1.4.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.4.1(a), item 4.0 of Bid Data Sheet as Indian Joint Venture Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Note 4 to Clause 1.0.0}, Subsidiary(ies) and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.4.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.4.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries), meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Joint Venture (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.4.1(a) and 3.0.0, Item 4.0 of BDS whose Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking

and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, Subsidiary(ies) and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non- performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER

PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.

- e) The Indian Manufacturing Company / Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
- 4. We the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
 - 5. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
 - 6. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
 - 7. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
 - 8. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and

confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :	For M/s..... (Bidder / Contractor)
1.....	 (Signature of the Authorised Representative)
..... (OfficialAddress)	Name..... Designation..... Common Seal of the Company.....
WITNESS :	For M/s (Qualified Steam Generator Manufacturer / Holding Company)
1.....	 (Signature of the Authorised Representative)
..... (Official Address)	Name..... Designation..... Common Seal of the Company
WITNESS :	For M/s (SUBSIDIARY 1 OF HOLDING COMPANY)
1.....	 (Signature of the Authorised Representative)
..... (Official Address)	Name..... Designation..... Common Seal of the Company
WITNESS :	For M/s (SUBSIDIARY 2 OF HOLDING COMPANY)
1.....	 (Signature of the Authorised Representative)
..... (Official Address)	Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- (i) ***However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bankguaranteestobefurnishedbyalltheentitieslendingsupporttotheHolding***

Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.

- (ii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.
- (iii) *Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2 AND NOTE *6 & *8 OF CLAUSE 1.0.0 OF ITEM 4.0 OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA, *PARENT COMPANY OF INDIAN MAJORITY STAKE HOLDER OF THE JV COMPANY, SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Parent Company of Indian Majority Stake Holder of the JV Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*AND WHEREAS Clause 1.4.2 and note *6 of clause 1.0.0, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.4.1(a), item 4.0 of Bid Data Sheet as Indian Joint Venture Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.4.1 (b) and note *6, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.4.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.4.2 and note *8, item 4 of BDS. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Joint Venture Company (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.4.1(a) and 3.0.0, Item 4.0 of BDS, directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHERPROMOTER").

*WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHERPROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be

jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, the *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each

Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
 - b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall

responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
 - e) The Indian Manufacturing Company / Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).

5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased

Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Parent Company of Indian Majority Stake Holder of the JV Company or the *Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer, in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

1.WITNESS:

.....
(Signature, Name & Address)

For M/s.....
(Qualified Steam Generator Manufacturer)
.....
(Signature of the Authorised Representative)
.....

Name.....
Designation.....
Common Seal of the Company
.....

WITNESS:

1.....

.....
(OfficialAddress)

*For M/s.....
(Indian Manufacturing Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS:

1.....

.....
(OfficialAddress)

*For M/s.....
(Parent Company of Indian Majority Stake
Holder of the JV Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS:

1.....

.....
(Official Address)

For M/s
(OTHER PROMOTER)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

WITNESS:

1.....

.....
(Official Address)

For M/s
(Subsidiary Company of Indian Manufacturing Company)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the

Company

Note:1. *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.*

2. **Bidder to strike out, whichever is not applicable.*

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2 AND NOTE *4, *6 & *8 OF CLAUSE 1.0.0 OF ITEM 4.0
OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA, *PARENT COMPANY OF INDIAN MAJORITY STAKE HOLDER OF THE JV COMPANY, SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Parent Company of Indian Majority Stake Holder of the JV Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India

Complex, 7, Institutional Area, Lodi Road, New Delhi-110003 INDIA (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*AND WHEREAS Clause 1.4.2 and note *6 of clause 1.0.0, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.4.1(a), item 4.0 of Bid Data Sheet as Indian Joint Venture Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Note 4 to Clause 1.0.0}, *Parent Company of Indian Majority Stake Holder of the JV Company and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.4.1 (b) and note *6 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.4.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries), meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Joint Venture Company (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.4.1(a) and 3.0.0, Item 4.0 of BDS, directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHERPROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the

requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called "OTHERPROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, the *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
 - b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators

- (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
- (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company / Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the

Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

4. We the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the saidContract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the saidContract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per theContract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of theContract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Parent Company of Indian Majority Stake Holder of the JV Company or the *Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer, in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

For M/s
(Qualified Steam Generator Manufacturer/Holding Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s.....
(Parent Company of Indian Majority Stake
Holder of the JV Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(Subsidiary Company of Indian Manufacturing Company)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

- Note: 1. However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfilment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfilment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfilment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.**
- 2. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- 3.* Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2 AND NOTE *4, *6 & *8 OF CLAUSE 1.0.0 OF ITEM 4.0
OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA, *PARENT COMPANY OF INDIAN MAJORITY STAKE HOLDER OF THE JV COMPANY, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor" / *Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (Subsidiary(ies) of the Holding company who are lending strength/ experience to the holding company for meeting the requirements stipulated in clause 1.1.1 and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Parent Company of Indian Majority Stake Holder of the JV Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of IndianSubsidiary

Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*AND WHEREAS Clause 1.4.2 and note *6 of clause 1.0.0, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.4.1(a), item 4.0 of Bid Data Sheet as Indian Joint Venture Company of Qualified Steam Generator Manufacturer shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Note 4 to Clause 1.0.0}, *Parent Company of Indian Majority Stake Holder of the JV Company and *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.4.1 (b) and note *6 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.4.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries), meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Joint Venture Company (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.4.1(a) and 3.0.0, Item 4.0 of BDS, directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHERPROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHERPROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters,

of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), the *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies) hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries

and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).

b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:

- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
- (ii) Selection of auxiliaries for all Steam Generators
- (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
- (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.

d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.

e) The Indian Manufacturing Company / Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.

f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests

that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

4. We the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at

the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Parent Company of Indian Majority Stake Holder of the JV Company or Subsidiary(ies) or the *Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer, in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed

these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.....

.....
(OfficialAddress)

For M/s.....
(Bidder / Contractor)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(Qualified Steam Generator Manufacturer/Holding Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Parent Company of Indian Majority Stake
Holder of the JV Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company
For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(Subsidiary Company of Indian Subsidiary Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note: 1. However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.

2. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

3.* Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (INDIAN COMPANY WHO HOLDS ATLEAST 51% EQUITY IN JOINT VENTURE COMPANY), THE INDIAN JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.5.1 (a), ITEM 4.0 OF BID DATA SHEETS AND QUALIFIED STEAM GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A) (*ALONGWITH REQUIREMENTS OF 1.1.2 (a)/1.1.2 (b) AND 3.0.0) ITEM 4.0 OF BID DATA SHEETS, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under the Companies Act having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at (hereinafter called the "Qualified Steam Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s a Company, other than the Qualified Steam GeneratorManufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the **EPC Package for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS Clause 1.5.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds atleast 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India shall furnish a Deed of Joint Undertaking executed by him, the

Qualified Steam Generator Manufacturer meeting the requirements specified in Clause 1.1.1(A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b) and Clause 3.0.0, Item 4.0 of BDS and *the Indian Joint Venture Company who meets the requirements stipulated in clause 1.5.1 (a), item 4.0 of Bid DataSheet.

*AND WHEREAS clause 1.5.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Turbine Generator in India, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator set and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.5.2 item 4 of BDS.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Bidder) and the M/s(Qualified Steam Generator Manufacturer)..... as the promoters, have set up a Joint Venture Company (M/s..... Name of the JV Company.....) (hereinafter called the "Joint Venture Company/ Indian Manufacturing Company") incorporated in India under the Companies act, for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.5.1 (a) of the Qualifying Requirements, Item 4.0 of BDS.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint

Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.

2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and

shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR)

WITNESS :

1.....

.....

.....
(OfficialAddress)

(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(Qualified Steam Generator Manufacturer)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Subsidiary/Joint Venture
Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

Note:

- i) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of JointUndertaking.**
- ii) ***Bidder to strike out, whichever is notapplicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (INDIAN COMPANY WHO HOLDS ATLEAST 51% EQUITY IN THE JOINT VENTURE COMPANY), THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under the Companies Act having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at (hereinafter called the "Qualified Steam Generator Manufacturer/ Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s a Company, other than the Qualified Steam GeneratorManufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS Clause 1.5.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds atleast 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements specified in Clause 1.1.1(A) alongwith requirements of

clause 1.1.2 (a)/1.1.2 (b) and Clause 3.0.0, Item 4.0 of BDS and the Indian Joint Venture Company who meets the requirements stipulated in clause 1.5.1 (a) , item 4.0 of Bid Data Sheet. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.5.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Turbine Generator in India, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii)* Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator set and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.5.2 item 4 of BDS. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Bidder) and the M/s(Qualified Steam Generator Manufacturer)..... as the promoters, have set up a Joint Venture Company (M/s..... Name of the JV Company.....) (hereinafter called the "Joint Venture Company/ Indian Manufacturing Company") incorporated in India under the Companies act, for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.5.1 (a) of the Qualifying Requirements, Item 4.0 of BDS.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract with regard to implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to

proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's

works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for MAIN PLANT Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**

awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the OTHER PROMOTER and the Contractor through their

authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(Qualified Steam Generator Manufacturer/
Holding Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s.....
(Indian Subsidiary/Joint Venture
Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....

.....
(Signature of the Authorised
Representative)
Name.....

(OfficialAddress)

Designation.....
Common Seal of the
Company

Note:

- (i) **However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfilment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfilment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfilment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the MAIN PLANTPackage.**
- (ii) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of JointUndertaking.**
- (iii) ***Bidder to strike out, whichever is notapplicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & controls etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (INDIAN COMPANY WHO HOLDS ATLEAST 51% EQUITY IN THE JOINT VENTURE COMPANY), THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS) AND SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under the Companies Act having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at (hereinafter called the "Qualified Steam Generator Manufacturer/ Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (Subsidiary(ies) of the Holding company who are lending strength/ experience to the holding company for meeting the requirements stipulated in clause 1.1.1(A) and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s a Company, other than the Qualified Steam GeneratorManufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.5.2, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements specified in Clause 1.1.1(A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b) and Clause 3.0.0, Item 4.0 of BDS, Subsidiary(ies) and the Indian Joint Venture Company who meets the requirements stipulated in clause 1.5.1 (a) , item 4.0 of Bid Data Sheet. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.5.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical Steam Turbine Generator in India, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii)* Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator set and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.5.2 item 4 of BDS. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Bidder) and the M/s(Qualified Steam Generator Manufacturer)..... as the promoters, have set up a Joint Venture Company (M/s..... Name of the JV Company.....) (hereinafter called the "Joint Venture Company/ Indian Manufacturing Company") incorporated in India under the Companies act, for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.5.1 (a) of the Qualifying Requirements, Item 4.0 of BDS.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**

(As per Annexure-I), fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, Subsidiary(ies) and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non- performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be

carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for

incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.

- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
- 4. We the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
 - 5. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
 - 6. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
 - 7. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare

and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.

8. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place

of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/CONTRACTOR)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s.....
(Qualified Steam Generator Manufacturer/
Holding Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the

Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....

.....
(Signature of the Authorised
Representative)
Name.....

(Official Address)

Designation.....
Common Seal of the
Company

Note:

- (i)** *However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the MAIN PLANT Package.*
- (ii)** Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.
- (iii)** *Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2, AND NOTE *7 & *8 OF CLAUSE 1.0.0
OF ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (INDIAN COMPANY WHO HOLDS ATLEAST 51% EQUITY IN THE JOINT VENTURE COMPANY DIRECTLY OR THROUGH ITS SUBSIDIARY AS PER NOTE 7 OF CLAUSE 1.0.0), *WHOLLY OWNED SUBSIDIARY OF BIDDER AS PER NOTE 7 OF CLAUSE 1.0.0, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 FOR CLAUSE 1.0.0 AND QUALIFIED STEAM GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A) (*ALONGWITH REQUIREMENTS OF 1.1.2 (a)/1.1.2 (b) AND 3.0.0) ITEM 4.0 OF BID DATA SHEETS AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under the Companies Act having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Wholly owned Subsidiary Company of Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at (hereinafter called the "Qualified Steam Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), and

M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian JV Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*AND WHEREAS Clause 1.5.2 and note no. *7 of clause 1.0.0 Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder, who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an Indian Company who holds atleast 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India shall furnish a Deed of Joint Undertaking executed by him, *Wholly owned Subsidiary Company of Bidder/Contractor, the Qualified Steam Generator Manufacturer meeting the requirements specified in Clause 1.1.1(A) and the Indian Joint Venture Company who meets the requirements stipulated in clause 1.5.1 (a) , item 4.0 of Bid Data Sheet. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.5.1 (b) and note no. *7 of clause 1.0.0 item 4.0 of BDS of Bidding Documents, stipulate that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Turbine Generator in India, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator set and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.5.2 item 4 of BDS. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Bidder), *M/s.....(Wholly Owned Subsidiary Company of the Bidder)..... and M/s(Qualified Steam Generator Manufacturer)..... as the promoters, have set up a Joint Venture Company (M/s..... Name of the JV Company.....) (hereinafter called the "Joint Venture Company/ Indian Manufacturing Company") incorporated in India under the Companies act, for manufacturing of supercritical Steam Generator sets through M/s.(Indian JV Company/*Subsidiary of JV Company/)....., meeting the requirements of Clause 1.5.1 (a) of the Qualifying Requirements, Item 4.0 of BDS.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, the *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall,

however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
 - a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
 - b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall

responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
 - e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).

5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the saidContract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per theContract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transferagreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of theContract(s).
9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specifiedherein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the

defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Wholly owned Subsidiary Company of Bidder/Contractor or the *Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer, in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

For M/s
(*WHOLLY OWNED SUBSIDIARY OF BIDDER/ CONTRACTOR)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

For M/s
(Qualified Steam Generator Manufacturer)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Subsidiary/Joint Venture
Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*Subsidiary of Indian Subsidiary/Joint
VentureCompany)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

Note: 1. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

2. *Strikeout whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2 AND NOTE 4 AND NOTE *7 & *8 TO
CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (INDIAN COMPANY WHO HOLDS ATLEAST 51% EQUITY IN THE JOINT VENTURE COMPANY DIRECTLY OR THROUGH ITS SUBSIDIARY AS PER NOTE 7 OF CLAUSE 1.0.0), *WHOLLY OWNED SUBSIDIARY OF BIDDER AS PER NOTE 7 OF CLAUSE 1.0.0, THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.5.1 (a), ITEM 4.0 OF BID DATA SHEETS, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 FOR CLAUSE 1.0.0, QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS) AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under the Companies Act having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Wholly owned Subsidiary Company of Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at (hereinafter called the "Qualified Steam Generator Manufacturer/ Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Subsidiary / Joint Venture Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*AND WHEREAS Clause 1.5.2 and note no. *7 of clause 1.0.0, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds atleast 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India shall furnish a Deed of Joint Undertaking executed by him, *Wholly owned Subsidiary Company of Bidder/Contractor, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements specified in Clause 1.1.1(A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b) and Clause 3.0.0, Item 4.0 of BDS and the Indian Joint Venture Company who meets the requirements stipulated in clause 1.5.1 (a) , item 4.0 of Bid Data Sheet. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.5.1 (b) and note no. *7 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Turbine Generator in India, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii)* Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator set and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.5.2 item 4 of BDS. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Bidder), *M/s.....(Wholly Owned Subsidiary Company of the Bidder)..... and M/s(Qualified Steam Generator Manufacturer)..... as the promoters, have set up a Joint Venture Company (M/s..... Name of the JV Company.....) (hereinafter called the "Joint Venture Company/ Indian Manufacturing Company") incorporated in India under the Companies act, for manufacturing of supercritical Steam Generator sets through M/s.(Indian JV Company/*Subsidiary of JV Company/)....., meeting the requirements of Clause 1.5.1 (a) of the Qualifying Requirements, Item 4.0 of BDS.

AND WHEREAS the Bidder, *the Wholly owned subsidiary of the Bidder, the Qualified Steam Generator Manufacturer, the Joint Venture Company, *the Subsidiary Company of the JV Company are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally responsible and bound unto the Employer for the successful performance of the Contract for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer,

*Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, the *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:

- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
- (ii) Selection of auxiliaries for all Steam Generators
- (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
- (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out

all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

4. We the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the saidContract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the saidContract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per theContract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any

prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Wholly owned Subsidiary Company of Bidder/Contractor or the *Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer, in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.....

.....
(Official Address)

For M/s
(BIDDER/ CONTRACTOR)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

WITNESS :

1.....

.....
(Official Address)

For M/s
(*WHOLLY OWNED SUBSIDIARY
OF BIDDER/ CONTRACTOR)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

WITNESS :

1.....

.....
(OfficialAddress)

For M/s.....
(*Subsidiary of Joint Venture Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(Qualified Steam Generator Manufacturer/Holding Company)

WITNESS :

1.....

.....

.....
(Signature of the Authorised
Representative)
Name.....

(OfficialAddress)

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Subsidiary/Joint Venture
Company)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

.....
(OfficialAddress)

*For M/s
(OTHER PROMOTER)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

.....
(OfficialAddress)

Note: 1. *However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfilment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfilment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfilment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.***

2. *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.*

3. ** Bidder to strike out, whichever is not applicable.*

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2 AND NOTE 4 AND NOTE *7 & *8 TO
CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (INDIAN COMPANY WHO HOLDS ATLEAST 51% EQUITY IN THE JOINT VENTURE COMPANY DIRECTLY OR THROUGH ITS SUBSIDIARY AS PER NOTE 7 OF CLAUSE 1.0.0), *WHOLLY OWNED SUBSIDIARY OF BIDDER AS PER NOTE 7 OF CLAUSE 1.0.0, THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.5.1 (a), ITEM 4.0 OF BID DATA SHEETS, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 FOR CLAUSE 1.0.0, QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/EXPERIENCE TO THE HOLDING COMPANY, AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under the Companies Act having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Wholly owned Subsidiary Company of Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian JV Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at (hereinafter called the "Qualified Steam Generator Manufacturer/ Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (Subsidiary(ies) of the Holding company who are lending strength/ experience to the holding company for meeting the requirements stipulated in clause 1.1.1(A) and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary

Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*AND WHEREAS Clause 1.5.2 and note no. *7 of clause 1.0.0, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India shall furnish a Deed of Joint Undertaking executed by him, *Wholly owned Subsidiary Company of Bidder/Contractor, the Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements specified in Clause 1.1.1(A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b) and Clause 3.0.0, Item 4.0 of BDS and the Indian Joint Venture Company who meets the requirements stipulated in clause 1.5.1 (a) , item 4.0 of Bid Data Sheet. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

*AND WHEREAS clause 1.5.1 (b) and note no. *7 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Turbine Generator in India, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator set and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.5.2 item 4 of BDS. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Bidder), *M/s.....(Wholly Owned Subsidiary Company of the Bidder)..... and M/s(Qualified Steam Generator Manufacturer)..... as the promoters, have set up a Joint Venture Company (M/s..... Name of the JV Company.....) (hereinafter called the "Joint Venture Company/ Indian Manufacturing Company") incorporated in India under the Companies act, for manufacturing of supercritical Steam Generator sets through M/s.(Indian JV Company/*Subsidiary of JV Company/)....., meeting the requirements of Clause 1.5.1 (a) of the Qualifying Requirements, Item 4.0 of BDS.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to

carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the saidContract(s).

- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), the *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies) hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and

auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).

- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure ER CLAUSE 1.7.3 & *1.7.4 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID / procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and

demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

4. We the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the saidContract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the saidContract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per theContract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24monthsfromthescheduledendofdefectliabilityperiodofthelastunitof800MWunder

the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Wholly owned Subsidiary Company of Bidder/Contractor or Subsidiary(ies) or the *Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer, in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *Wholly owned Subsidiary Company of Bidder/Contractor, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/CONTRACTOR)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(*WHOLLY OWNED SUBSIDIARY OF BIDDER/ CONTRACTOR)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(Qualified Steam Generator Manufacturer/Holding Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....

Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Subsidiary/Joint Venture
Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*Subsidiary of Joint Venture
Company/Indian Manufacturingcompany)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....

Common Seal of the
Company.....

*For M/s
(OTHER PROMOTER)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

Note: 1. ***However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.***

2. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

3.* Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A), *THE INDIAN SUBSIDIARY/ *JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor", which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)and

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.6.2 (a) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirement of Clause 1.6.1 of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.6.2 item 4 of BDS.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS whose *other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " *OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated in India under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose *OTHER PROMOTER having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to steam generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to steam generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the *OTHER PROMOTER, The Indian Subsidiary/Joint Venture Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
 - b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality

surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
 - e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and

suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
 5. We, the Contractor, Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and

confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).

6. We, the Contractor, Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know- how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....

Common Seal of the
Company.....

For M/s
(Qualified Steam Generator Manufacturer)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- i) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- ii) ***Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Stem Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.
- Y Piping including,
 - Power cycle piping
 - Low pressure piping
 - Equipment cooling water system
 - Boiler fill system
- Y Equipment Cooling Water System
- Y Plant Utilities including,
 - Compressed air system(Common system)
- Y Handling system for all equipments indicated above
- Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators
 - Power & Control Cable
 - Earthing, Lightning protection
 - Electrical systems as required.
- Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND
AUXILIARIES AS PER CLAUSE 1.6.2 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID
DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s

..... a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/ Contractor", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.6.2 (a) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirement of Clause 1.6.1 of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries)} meeting the requirements stipulated at 1.3.1 (a) /1.4.1

(a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS whose other *OTHER PROMOTER having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose *OTHER PROMOTER having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all

obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the *OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).

- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in

certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know- how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability

period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.....

.....
(Official Address)

WITNESS:

1.....

.....
(Official Address)

WITNESS:

1.....

.....
(Official Address)

WITNESS:

1.....

.....
(Official Address)

Note:

For M/s.....

(Bidder / Contractor)

.....
(Signature of the Authorised

Representative)

Name.....

Designation.....

Common Seal of the

Company.....

For M/s

(Qualified Steam Generator Manufacturer
/ Holding Company)

.....
(Signature of the Authorised

Representative)

Name.....

Designation.....

Common Seal of the

Company

*For M/s.....

(Indian Manufacturing Company)

.....
(Signature of the Authorised

Representative)

Name.....

Designation.....

Common Seal of the

Company.....

For M/s

(*OTHER PROMOTER)

.....
(Signature of the Authorised

Representative)

Name.....

Designation.....

Common Seal of the

Company

However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.

- (i) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.
- (ii) *Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economizer inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (Inapplicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.
- Y Piping including,
 - Power cycle piping
 - Low pressure piping
 - Equipment cooling water system
 - Boiler fill system
- Y Equipment Cooling Water System
- Y Plant Utilities including,
 - Compressed air system(Common system)
- Y Handling system for all equipments indicated above
- Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators
 - Power & Control Cable
 - Earthing, Lightning protection
 - Electrical systems as required.
- Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor", which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (Subsidiary(ies) of the Holding company who are lending strength/ experience to the holding company for meeting the requirements stipulated in clause 1.1.1 and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the

EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS clause 1.6.2 (a) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirement of Clause 1.6.1 of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries)}, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS whose *Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS whose *other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called " OTHER PROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking

and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the *OTHER PROMOTER, *The Indian Subsidiary/Joint Venture Company, Subsidiary(ies) and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the *OTHER

PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators.
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant.
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company /which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the

Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.

8. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company and*OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

	For M/s..... (Bidder / Contractor)
WITNESS:	
1.....	 (Signature of the Authorised Representative)
.....	Name.....
(Official Address)	Designation.....
	Common Seal of the Company.....
	For M/s (Qualified Steam Generator Manufacturer / Holding Company)
WITNESS :	
1.....	 (Signature of the Authorised Representative)
.....	Name.....
(Official Address)	Designation.....
	Common Seal of the Company
	For M/s (SUBSIDIARY 1 OF HOLDINGCOMPANY)
WITNESS :	
1.....	 (Signature of the Authorised Representative)
.....	Name.....
(Official Address)	Designation.....
	Common Seal of the Company
	For M/s..... (SUBSIDIARY 2 OF HOLDINGCOMPANY)
WITNESS :	
1.....	 (Signature of the Authorised

.....
(Official Address)

Name.....

Designation.....

Common Seal of the
Company

For M/s

(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....

(Signature of the Authorised
Representative)

Name.....

.....
(Official Address)

Designation.....

Common Seal of the
Company

*For M/s.....

(Indian Manufacturing Company)

WITNESS:

1.....

.....

(Signature of the Authorised
Representative)

Name.....

.....
(Official Address)

Designation.....

Common Seal of the
Company.....

For M/s

(*OTHER PROMOTER)

WITNESS:

1.....

.....

(Signature of the Authorised
Representative)

Name.....

.....
(Official Address)

Designation.....

Common Seal of the
Company

Note:

- (i) ***However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.***

- (ii) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- (iii) ***Bidder to strike out, whichever is not applicable.**
Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Stem Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator

- Chemical LP Dozing system and oxygenated treatment system
 - Thermal Insulation and Cladding
 - Other systems like tools & tackles etc. as specified.
- Y Piping including,
- Power cycle piping
 - Low pressure piping
 - Equipment cooling water system
 - Boiler fill system
- Y Equipment Cooling Water System
- Y Plant Utilities including,
- Compressed air system(Common system)
- Y Handling system for all equipments indicated above
- Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators
- Power & Control Cable
 - Earthing, Lightning protection
 - Electrical systems as required.
- Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurization system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES AS
PER CLAUSE 1.6.2 AND NOTE *8 OF CLAUSE 1.0.0 OF ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA, SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor", which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)and

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS clause 1.6.2 (a) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirement of Clause 1.6.1 of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from suchqualifiedassociateandshallfurnishaDeedofJointUndertakingasperclause1.3.2andnote*8, item 4 of BDS. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS, directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose *Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose *other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called "OTHERPROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable

Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, the Subsidiary Company of Indian Manufacturing Company, The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the *OTHER PROMOTER, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or

obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the

Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.

- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
- 4. We the Contractor, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
 - 5. We, the Contractor, Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
 - 6. We, the Contractor, Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).

7. We, the Contractor, Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International

Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :	For M/s..... (Bidder / Contractor)
1.....	 (Signature of the Authorised Representative)
..... (Official Address)	Name..... Designation..... Common Seal of the Company.....
1.WITNESS:	For M/s..... (Qualified Steam Generator Manufacturer)
..... (Signature, Name& Address)	 (Signature of the Authorised Representative)
	Name..... Designation..... Common Seal of the Company.....

WITNESS :	For M/s..... (Indian Manufacturing Company)
1.....	 (Signature of the Authorised Representative)
..... (Official Address)	Name..... Designation..... Common Seal of the

Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(Subsidiary Company of Indian Manufacturing Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:1. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

2. *Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Stem Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up& circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system

- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.
- Y Piping including,
 - Power cycle piping
 - Low pressure piping
 - Equipment cooling water system
 - Boiler fill system
- Y Equipment Cooling Water System
- Y Plant Utilities including,
 - Compressed air system(Common system)
- Y Handling system for all equipments indicated above
- Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators
 - Power & Control Cable
 - Earthing, Lightning protection
 - Electrical systems as required.
- Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2 AND NOTE *4 & *8 OF CLAUSE 1.0.0 OF ITEM 4.0
OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA, SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 AND THE *OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor", which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the

EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.6.2 (a) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirement of Clause 1.6.1 of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries)}, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS, directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called "OTHERPROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable

Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the*OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of *the Qualified Steam Generator Manufacturer, the Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ US\$ 249 Million for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the *OTHER PROMOTER, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to

time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
 - e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
4. We the Contractor, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India

in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).

6. We, the Contractor, Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later.

The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

For M/s
(Qualified Steam Generator Manufacturer/Holding Company)

WITNESS :

1.....

.....

.....
(Signature of the Authorised Representative)
Name.....

(Official Address)

Designation.....
Common Seal of the
Company

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)

.....
(Official Address)

Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*OTHER PROMOTER)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)

.....
(Official Address)

Name.....
Designation.....
Common Seal of the
Company

For M/s
(Subsidiary Company of Indian Manufacturing Company)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)

.....
(Official Address)

Name.....
Designation.....
Common Seal of the
Company

Note: 1. However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.

2. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

3.* Bidder to strike out, whichever is not applicable.
Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Stem Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up& circulation system,
- Air heaters&SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)

- Elevators for Steam generator
 - Chemical LP Dosing system and oxygenated treatment system
 - Thermal Insulation and Cladding
 - Other systems like tools & tackles etc. as specified.
- Y Piping including,
- Power cycle piping
 - Low pressure piping
 - Equipment cooling water system
 - Boiler fill system
- Y Equipment Cooling Water System
- Y Plant Utilities including,
- Compressed air system(Common system)
- Y Handling system for all equipments indicated above
- Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators
- Power & Control Cable
 - Earthing, Lightning protection
 - Electrical systems as required.
- Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurization system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2 AND NOTE *4 & *8 OF CLAUSE 1.0.0 OF ITEM 4.0
OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR IN INDIA, SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 AND THE *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor", which expression shall include its successors, administrators, executors and permitted assigns)AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (Subsidiary(ies) of the Holding company who are lending strength/ experience to the holding company for meeting the requirements stipulated in clause 1.1.1 and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian

Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.6.2 (a) and note *8 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirement of Clause 1.6.1 of item 4.0 of BDS shall associate, with **EITHER** i) *Qualified Steam Generator Manufacturer who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer {who is a holding company, singularly or collectively (along with its subsidiaries) meeting the requirements of Clause 1.1.1 (A) item 4 of BDS}, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary (M/s.....Bidder/Contractor) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a) and 3.0.0, Item 4.0 of BDS, directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Promoter having a stake of 25% or more in the Bidder/ Contractor is M/s (hereinafter called " OTHER PROMOTER").

*WHEREAS M/s(Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/Joint Venture Company (M/s.....) incorporated under the Companies Act, of India for manufacturing of supercritical Steam Generator sets meeting the requirements of Clause 1.3.1(a)/1.4.1(a) and 3.0.0, Item 4.0 of BDS directly or through (*M/s. Subsidiary Company of Indian Manufacturing Company) as per note 8 of clause 1.0.0 of Item 4.0 of BDS, whose other Promoter having a stake of 25% or more in the Indian Subsidiary/Joint Venture Company is M/s (hereinafter called "OTHERPROMOTER").

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).

- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, the OTHER PROMOTER, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the *Subsidiary Company of Indian Manufacturing Company and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Generator Manufacturer, the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Qualified Steam Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER (with respect to obligations and responsibilities of the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the*OTHER PROMOTER covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows:
- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
 - b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators

- (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
- (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the

Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

4. We the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for successful implementation of the Phased Manufacturing Program specified in the said Contract(s).
5. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for indigenizing the manufacturing of supercritical Steam Generator sets in India in a phased manner in accordance with the Phased Manufacturing Program specified in the said Contract(s).
6. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
7. We, the Contractor, Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake, declare and confirm that we shall be fully responsible for ensuring that relevant training is imparted to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
8. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and the *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

9. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

10. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the Subsidiary Company of Indian Manufacturing Company or the *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

11. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Qualified Steam Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, the Subsidiary Company of Indian Manufacturing Company, the *OTHER PROMOTER and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS :

1.....

.....
(Signature of the Authorised Representative)

.....

Name.....

(Official Address)

Designation.....
Common Seal of the
Company.....

For M/s

(Qualified Steam Generator Manufacturer/Holding Company)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)

Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

For M/s

(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)

Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

For M/s

(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)

Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

For M/s

(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)

Name.....

.....

(Official Address)

Designation.....
Common Seal of the
Company

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

.....
(Official Address)

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

.....
(Official Address)

*For M/s
(Subsidiary Company of Indian Manufacturing Company)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

.....
(Official Address)

Note: 1. However, in case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be

furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package.

2. *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.*

3.* *Bidder to strike out, whichever is not applicable.*
Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Stem Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up& circulation system,

- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding
- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipment's indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurization system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR STEAM GENERATOR AND
AUXILIARIES AS PER CLAUSE 1.6.2, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR,
*INDIAN STEAM GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF 1.2.1
OF ITEM 4.0 OF BID DATA SHEETS AND THE QUALIFIED STEAM GENERATOR
MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID
DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF STEAM GENERATOR AND
AUXILIARIES**

-NOT USED-

**FORM OF DEED OF JOINT UNDERTAKING FOR STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER, THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR SETS IN INDIA AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Steam Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

AND WHEREAS clause 1.7.2(i), item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)(As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
3. We, the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).

4. We, the Contractor, the Qualified Steam Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
 5. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
 - 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).
- The liability of the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.
6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
 - b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators

- (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
- (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the

Contractor *and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

7. We, the Contractor, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

9. Any dispute that may arise between the Employer and the Contractor or Indian Subsidiary/ Joint Venture Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Generator Manufacturer the Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.....

.....
(OfficialAddress)

For M/s
(BIDDER/ CONTRACTOR)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

WITNESS :

1.....

.....
(OfficialAddress)

For M/s.....
(the Qualified Steam Generator
Manufacturer)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS :

1.....

.....
(OfficialAddress)

For M/s.....
(Indian Manufacturing Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS :

1.....

.....
(OfficialAddress)

For M/s.....
(OTHER PROMOTER)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Notes:

- i) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- ii) ***Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY ALONGWITH ITS SUBSIDIARY(IES)), THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR SETS IN INDIA AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Qualified Steam Generator Manufacturer/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**(hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

AND WHEREAS clause 1.7.2(i), item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements stipulated in clause 1.1.1 (A), item 4.0 of Bid Data Sheet alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)(As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
3. We, the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).

4. We, the Contractor, the Qualified Steam Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
5. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
 - b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buckstays etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant

- (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor *and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

7. We, the Contractor, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

9. Any dispute that may arise between the Employer and the Contractor or Indian Subsidiary/ Joint Venture Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Generator Manufacturer the Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s.....
(the Qualified Steam Generator
Manufacturer i.e. HoldingCompany)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s.....
(OTHER PROMOTER)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Notes:

- (i) **The Qualified Steam Generator Manufacturer shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Qualified Steam Generator Manufacturer shall arrange for signing of DJU and bank guarantees by all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, before the change in management control actually occurs. Such bank guarantees to be furnished by the Holding Company and entities lending support for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the MAIN PLANTPackage.**
- (ii) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of JointUndertaking.**
- (iii) ***Bidder to strike out, whichever is notapplicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY ALONGWITH ITS SUBSIDIARY(IES)), THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR SETS IN INDIA AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Qualified Steam Generator Manufacturer/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (the Subsidiary(ies) of the Qualified Steam Generator Manufacturer who are lending strength/ experience to the Qualified Steam Generator Manufacturer for meeting the requirements stipulated in clause 1.1.1 (A) and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**(hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

AND WHEREAS clause 1.7.2(i), item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements stipulated in clause 1.1.1 (A), item 4.0 of Bid Data Sheet alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).

3. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know- how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per theContract(s).
4. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies) do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
5. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the saidContract(s).
- 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause ofSCC).

The liability of the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.
6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).

- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buckstay system etc.
- (ii) Selection of auxiliaries for all Steam Generators
- (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
- (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if oxygen, carbon dioxide & Nitrogen system is manufactured at its works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance

of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer, Subsidiary(ies) shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

7. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
9. Any dispute that may arise between the Employer and the Contractor or Indian Subsidiary/ Joint Venture Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator

Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS : For M/s
(BIDDER/ CONTRACTOR)

1.....
.....
(OfficialAddress) (Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company

WITNESS : For M/s.....
(the Qualified Steam Generator Manufacturer i.e. HoldingCompany)

1.....
.....
(OfficialAddress) (Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

WITNESS : For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

1.....
.....
(OfficialAddress) (Signature of the Authorised Representative)
Name.....
Designation.....

Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s.....
(OTHER PROMOTER)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Notes:

- (i) The Holding Company shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiary(ies) lending strength / experience to the Holding Company for fulfilment of requirement of clause 1.1.1A, item 4.0 of Bid Data Sheet, the bidder shall arrange for separate on demand bank guarantees from all such Subsidiary(ies) for an amount aggregating 0.6% of the total contract price of the EPC Package divided equally among them before the change in management control actually occurs.
- (ii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.
- (iii) *Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 AND NOTE *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER, THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR SETS IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ *JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE NO. 8 FOR CL 1.0.0 AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Qualified Steam Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS clause 1.7.2(i), item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER i)**

*Qualified Steam Generator Manufacturer meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW) (As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract with regard to implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).

3. We, the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
4. We, the Contractor, the Qualified Steam Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
5. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.
6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).

- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/ acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance

of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.

7. We, the Contractor, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC PACKAGE awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC PACKAGE awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
9. Any dispute that may arise between the Employer and the Contractor or Indian Subsidiary/ Joint Venture Company or Subsidiary of Indian Manufacturing Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR)

WITNESS :

1.

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s.....
(the Qualified Steam Generator
Manufacturer)

WITNESS :

1.

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name
Designation.....
Common Seal of the
Company.....

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name
Designation.....
Common Seal of the
Company.....

For M/s.....
(Subsidiary Company of
Indian Manufacturing Company)

WITNESS :

1.

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name
Designation.....
Common Seal of the
Company.....

For M/s.....
(OTHER PROMOTER)

WITNESS :

1.

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name
Designation.....
Common Seal of the
Company.....

Notes:

- i) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.**
- ii) ***Bidder to strike out, whichever is not applicable.**

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Stem Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, supports etc.
- Soot blowing system with piping, valves, controls etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (If applicable)
- Aux PRDS and auxiliary steam piping
- Start up& circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.
- Y Piping including,
 - Power cycle piping
 - Low pressure piping
 - Equipment cooling water system
 - Boiler fill system
- Y Equipment Cooling Water System
- Y Plant Utilities including,
 - Compressed air system(Common system)
- Y Handling system for all equipments indicated above
- Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators
 - Power & Control Cable
 - Earthing, Lightning protection
 - Electrical systems as required.
- Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 AND NOTE *4 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY ALONGWITH ITS SUBSIDIARY(IES)), THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR SETS IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ *JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE NO. 8 FOR CL 1.0.0 AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR SUCCESSFUL PERFORMANCE OF THE STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Qualified Steam Generator Manufacturer/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**(hereinafter referred to as "Plant") vide its Bidding Document No.:**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS clause 1.7.2(i), item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of JointUndertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)(As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the contract with regard to implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.

2. We the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the saidContract(s).
3. We, the Contractor, the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per theContract(s).
4. We, the Contractor, the Qualified Steam Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transferagreement.
5. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the the Qualified Steam Generator Manufacturer, Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the saidContract(s).
- 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause ofSCC).

The liability of the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.
6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be asfollows:
 - a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators;

selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).

- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
- (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/acceptance.
- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Steam Generator Manufacturer shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
7. We, the Contractor, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertakings shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

9. Any dispute that may arise between the Employer and the Contractor or Indian Subsidiary/ Joint Venture Company or *Subsidiary of Indian Manufacturing Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS:

1.....

.....
(Official Address)

For M/s
(BIDDER/ CONTRACTOR)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

WITNESS:

1.....

.....
(Official Address)

For M/s.....
(the Qualified Steam Generator
Manufacturer/Holding Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(Subsidiary Company of
Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s.....
(OTHER PROMOTER)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Notes:

1. The Qualified Steam Generator Manufacturer shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1 (A), item 4.0 of Bid Data Sheet, the Qualified Steam Generator Manufacturer shall arrange for signing of DJU and bank guarantees by all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1 (A), item 4.0 of Bid Data Sheet, before the change in management control actually occurs. Such bank guarantees to be furnished by the Holding Company and entities lending support for fulfillment of requirement of clause 1.1.1 (A), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the MAINPLANTPackage.
2. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.
3. * Bidder to strike out, whichever is not applicable

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & control etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 AND NOTE *4 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM GENERATOR MANUFACTURER (HOLDING COMPANY ALONGWITH ITS SUBSIDIARY(IES)), THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR SETS IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ *JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM GENERATOR IN INDIA AS PER NOTE NO. 8 FOR CL 1.0.0 AND *OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY 1.7.4 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID D AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Qualified Steam Generator Manufacturer/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under having its Registered Office at M/s a Company registered under having its Registered Office at and M/s a Company registered under having its Registered Office at (the Subsidiary(ies) of the bidder/*the Qualified Steam Generator Manufacturer who are lending strength/ experience to the bidder/*the Qualified Steam Generator Manufacturer for meeting the requirements stipulated in clause 1.1.1 (A) and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Generator Manufacturer, registered under having its Registered Office at and having an equity of 25% or more in the Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

AND WHEREAS clause 1.7.2(i), item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER** i) *Qualified Steam Generator Manufacturer, who is a holding company collectively (alongwith its subsidiaries) meeting the requirements of Clause 1.1.1 (A) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) /1.4.1 (a) (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Generator and auxiliaries from such qualified associate. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing Supercritical Steam Generator in India of the above Indian subsidiary / JV Company and shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

WHEREAS M/s (Qualified Steam Generator Manufacturer)....., as a promoter, has set up an Indian Subsidiary/ Joint Venture Company (M/s..... Name of the JV/ Subsidiary Company.....) (hereinafter called the "Indian Manufacturing Company") incorporated in India under the Companies Act, for manufacturing of supercritical Steam Generator sets whose other promoter having 25% or higher equity in the Indian Joint Venture Company / Indian Subsidiary Company is M/s (hereinafter called "OTHER PROMOTER")..... meeting the requirements as specified in Clause 1.1.2 (a)/1.1.2 (b) and 3.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance the contract for the scope related to Steam Generator and auxiliaries for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)(As per Annexure-I)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND WHEREAS the Bidder, the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance the contract for the scope related to Steam Generator and auxiliaries including satisfactory thermal performance of Steam Generator and its auxiliaries and achievement of all guaranteed parameters of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. We the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
3. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring that transfer of the technological know-how for super critical Steam Generator sets (of the type, size and rating specified in the Contract(s)) in the form of complete transfer of design dossier, design software's, drawings and documentation and quality system manuals is transferred to the Indian Manufacturing Company as per the Contract(s).
4. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies) do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company as part of the technology transfer agreement.
5. In case of any breach of the Contract(s) committed by the Contractor, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance the contract for the scope related to Steam Generator and auxiliaries, including its satisfactory thermal performance and achievement of all guaranteed parameters as specified in the Contract, for all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking including the technical guarantees for the complete Steam Generator and auxiliary equipment in order to discharge the Contractor's obligations and responsibilities stipulated in the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract(s) related to any or all of the Steam Generators and its auxiliaries, we the Qualified Steam Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER and the Contractor jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said Contract(s).
- 5.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER hereunder shall, however, be limited to an amount calculated @ **US\$ 249 Million** for each Steam Generator set to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

6. Without prejudice to the generality of the undertaking in paragraphs above, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Generator Manufacturer shall be fully responsible for complete engineering, preparation of all designs, design calculations, design documents/drawings and manufacturing drawings for all the Steam Generators; selection of their auxiliaries and interfacing/ integrating all Steam Generators with their auxiliaries so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators and auxiliaries as well as thermal performance meeting all stipulated technical requirements as well as all guaranteed parameters specified in the Contract(s).
- b) We, the Qualified Steam Generator Manufacturer shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators as well as design of structural/supporting system including mill and bunker building, buckstay system etc.
 - (ii) Selection of auxiliaries for all Steam Generators
 - (iii) Design of controls, protections and interlocks for all the Steam Generators and their auxiliaries for their safe and reliable operation as integral units with other equipments of the Main Plant
 - (iv) Providing all design data required by the Contractor to carry out design/ selection of balance equipment/ system for Steam Generators & auxiliaries and for their proper interfacing and integration.

Further, we, the Qualified Steam Generator Manufacturer shall extend our quality surveillance/ supervision/ quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/ or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Generator Manufacturer for successful commissioning and performance of the Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall depute its technical experts from time to time to the works/ Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulation of the Contracts.

- c) We, the Qualified Steam Generator Manufacturer will supply equipment/ components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Steam Generator Manufacturer will be fully responsible for the quality of manufacture of all equipments/ main assemblies/ components for incorporation in all the Steam Generators and auxiliaries. For the items to be manufactured as per the Qualified Steam Generator Manufacturer's design, the Qualified Steam Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian

Manufacturing Company which would result in the same quality of equipment as if manufactured at Qualified Steam Generator Manufacturer's works and shall meet Qualified Steam Generator Manufacturer's approval/ acceptance.

- e) The Indian Manufacturing Company /Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Steam Generator Manufacturer's design and to the Qualified Steam Generator Manufacturer's quality acceptance level (to be finalised before Notification of Award). Further, the contractor shall erect, commission and carry out the guarantee tests of all the Steam Generators and auxiliaries as per the contract in accordance with the Qualified Steam Generator Manufacturer's advice, procedure and guidance. In case, there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators and auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators and auxiliaries, the Qualified Steam Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators and auxiliaries under all the Contracts directly to the Employer and the Contractor and Qualified Steam Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Generator Manufacturer and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor *and the Qualified Steam Generator Manufacturer, Subsidiary(ies) shall demonstrate the successful performance of the Steam Generators and auxiliaries meeting the guaranteed parameters and demonstration parameters.
7. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. We, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and *OTHER PROMOTER do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
8. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid bank guarantees shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC Package awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in the completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract or completion of Phased Manufacturing Program, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

9. Any dispute that may arise between the Employer and the Contractor or the Qualified Steam Generator Manufacturer, Subsidiary(ies) or Indian Subsidiary/ Joint Venture Company or *Subsidiary of Indian Manufacturing Company or *OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

10. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Generator Manufacturer, Subsidiary(ies) the Indian Manufacturing Company, *Subsidiary of Indian Manufacturing Company and the *OTHER PROMOTER through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company

For M/s.....
(the Qualified Steam Generator
Manufacturer/HoldingCompany)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*Subsidiary Company of
Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s.....
(OTHER PROMOTER)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Note: 1. The Holding Company shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiary(ies) lending strength / experience to the Holding Company for fulfilment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the bidder shall arrange for separate on demand bank guarantees from all such Subsidiary(ies) for an amount aggregating 0.6% of the total contract price of the EPC Package divided equally among them before the change in management control actually occurs.

2. Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

3. * Bidder to strike out, whichever is not applicable.

Annexure-I

Scope for “Steam Generator & Auxiliaries”

Scope for Steam generator and Auxiliaries shall cover the following but not limited for the purpose of Deed of Joint Undertaking (DJU):

Steam Generator(s) complete with all associated auxiliaries and system including

- Steam & water circuit from inlet of NRV at inlet of economiser inlet to Main and Reheat steam pipes up to turbine inlet
- Air & flue gas system from fans suction to Chimney inlet
- Coal from Bunker outlet to Steam Generator
- Ash up to Bottom ash hopper outlet
- Complete pressure parts,
- All structural steel structures for SG and Auxiliaries, platforms, stairs, piping, valves, support etc.
- Soot blowing system with piping, valves, control etc.
- Coal feeders, Complete Fuel oil firing system, milling and complete coal firing system
- Coal combustion system including coal / oil burners & scanners.
- Air and flue gas ductwork and Dampers and complete draft plant
- Integral piping, mounting and fittings
- Primary air fans.
- Forced draft fans.
- Induced draft fans.
- seal air, scanner air fans
- GR fans (if applicable)
- Aux PRDS and auxiliary steam piping
- Start up & circulation system,
- Air heaters & SCAPH.
- Chemical dosing systems as applicable.
- Fuel oil pressurizing system (Common system)
- Elevators for Steam generator
- Chemical LP Dosing system and oxygenated treatment system
- Thermal Insulation and Cladding

- Other systems like tools & tackles etc. as specified.

Y Piping including,

- Power cycle piping
- Low pressure piping
- Equipment cooling water system
- Boiler fill system

Y Equipment Cooling Water System

Y Plant Utilities including,

- Compressed air system (Common system)

Y Handling system for all equipments indicated above

Y Electrical systems including motors of all Auxiliaries indicated above and Electric Actuators

- Power & Control Cable
- Earthing, Lightning protection
- Electrical systems as required.

Y Complete control and instrumentation Systems for the steam generator & its auxiliaries including boiler protection and burner management system, Auxiliary PRDS, Fuel oil pressurisation system, SADC and Soot blower MCC & controls etc.

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER NOTE 5 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER (SUPERCRITICAL STEAM GENERATOR MANUFACTURER) MEETING THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS PARTIALLY AND INTENDING TO QUALIFY AS PER NOTE (5) TO CLAUSE NO.1.0.0, ITEM 4.0 OF BID DATA SHEETS AND THE VARIABLE PRESSURE DESIGN TECHNOLOGY OWNER (LICENSOR) MEETING THE REQUIREMENT OF NOTE (5) TO CLAUSE NO.1.0.0, ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the Technology Owner/ Licensor, which expression shall include its successors, administrators, executors and permitted assigns), and

M/s a Company registered under the having its Registered Office at (hereinafter called the "Bidder/Contractor"/ Supercritical Steam Generator Manufacturer, which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**(hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

*AND WHEREAS Note (5) to Clause 1.0.0, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.1.1(A), item 4.0 of Bid Data Sheet partially shall associate with the Licensor who satisfies the qualification requirements specified in Note (5) to Clause 1.0.0, Item 4.0 of BDS and furnish a Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS M/s (Bidder) meets the requirement of clause 1.1.1(A), item no. 4.0 of BDS except that the evaporator in the reference steam generator is not designed for variable pressure operation and is designed for constant pressure (Universal Pressure) operation only, and desires to associate with M/s..... (Licensor)..... who is the original technology owner and with whom the bidder has an ongoing license agreement (which covers technology transfer) for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator suitable for variable pressure operation in sub-critical and supercritical pressure ranges) and who satisfies the qualification requirements as specified in Note (5) to Clause 1.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder and the Technology Owner are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and

bound unto the Employer for the successful performance of the Steam Generators, alongwith an extended warranty of atleast one (01) year over and above what is required as per bidding documents, fully meeting the stipulated technical requirements, and Guaranteed parameters as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER :

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Technology Owner and the Contractor do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of complete Steam Generators, alongwith an extended warranty of atleast one (01) year over and above what is required as per bidding documents , including its satisfactory thermal performance of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor, we the Technology Owner do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of complete Steam Generator, including its satisfactory thermal performance and achievement of guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking.
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of Technology Owner hereunder shall, however, be limited to an amount calculated @ **US\$ 35 Million** for each Steam Generator to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor and the Qualified Steam Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor may initially be carried out by the Contractor within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Technology Owner for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Technology Owner (with respect to obligations and responsibilities of the Technology Owner covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Technology Owner and Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows :
 - a) We, the Technology Owner shall be fully responsible for design and engineering of once through thermo dynamic and thermo hydraulic design, furnace, boiler heating surface, start up system so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators.
 - b) We, the Technology Owner shall be specifically responsible for the following:

- (i) Thermal and hydraulic design of Steam Generators.
 - (ii) Evaporator design including flow distribution, temperature
 - (iii) Metal temperatures and stresses, static stability and dynamic stability
 - (iv) Providing all design data required by the Contractor to carry out design of steam water separator for their proper interfacing and integration.
 - (v) Complete water wall system design, its supporting system and buckstay design
 - (vi) Complete design of start up drain and circulation system
- c) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the guarantee tests that the Steam Generators meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators, the Technology Owner shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators under all the Contracts directly to the Employer and the Contractor and Technology Owner shall promptly carry out all corrective measures and modifications (as suggested by the Technology Owner and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor and the Technology Owner shall demonstrate the successful performance of the Steam Generators meeting the guaranteed parameters and demonstration parameters.
4. We, the Contractor and the Technology Owner do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till one (1) year beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor. In case of delay in completion of the defect liability period under the Contract(s) beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 36 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. We, the Contractor and the Technology Owner do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
5. In case of award, in addition to the Contract Performance Securities to be furnished by the Contractor, the Technology Owner shall furnish as security on demand Performance Bank Guarantee(s) in favour of the Employer as per provisions of the bidding documents. The value of each such Bank Guarantee shall be equal to **INR 13 Millions (Indian Rupees Thirteen Million)** and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till one (1) year beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 39 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

6. Any dispute that may arise between the Employer and Contractor in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Technology Owner in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

7. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Bidder and the Licensor through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.

.....
(Official Address)

For M/s
(Bidder/ Contractor)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

WITNESS :

1.

.....
(Official Address)

For M/s.....
(Technology Owner/ Licensor)

.....
(Signature of the Authorised
Representative)
Name

Designation.....
Common Seal of the
Company.....

Note: Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

**FORM OF DEED OF JOINT UNDERTAKING FOR PROJECT MANAGEMENT WORK
AS PER CLAUSE 4.1.0 (b), ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER AND ASSOCIATE
[PROJECT MANAGEMENT ORGANIZATION WHO MEETS THE REQUIREMENT OF
CLAUSE 4.1.0 (b), ITEM 4.0 OF BID DATA SHEETS] FOR SUCCESSFUL PERFORMANCE
OF PROJECT MANAGEMENT/PROJECT EXECUTION ACTIVITIES IN THE SCOPE OF
WORK FOR EPC PACKAGE FOR KODERMA THERMAL POWER STATION PHASE-II
(2X800MW)**

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand
by M/s a Company registered under the
..... having its Registered Office at
(hereinafter called the "Bidder/Contractor", which expression shall include its successors,
administrators, executors and permitted assigns) AND

M/s a Company incorporated under
having its Registered Office at.....(hereinafter called the "Associate",
which expression shall include its successors, administrators, executors and permitted
assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by
the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called
"DVC" or "Employer" which expression shall include its successors, administrators, executors
and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply,
transportation to site, construction, installation, testing, commissioning and conductance of
guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION
PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:
DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.

AND WHEREAS Clause 4.1.0(b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents
stipulates that the bidder who does not meet the requirement of execution of Project
Management activities stipulated under clause 4.1.0 (b), shall associate with a Project
Management Organisation who meets the requirements indicated at clause 4.1.0(b), item 4.0
of BDS, to carry-out Project Management activities of the EPC PACKAGE and furnish a Deed
of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid
Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER
STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No.
DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.

AND WHEREAS the Bidder and the Associate are required to jointly execute and furnish along
with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and
bound unto the Employer to perform successfully all the Project Management/Project
Execution activities included in the scope of work for EPC PACKAGE for **KODERMA
THERMAL POWER STATION PHASE-II (2X800MW)**, specified in the Employer's Bidding
Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**, in the event the
Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER :

1. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Associate and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of all Project Management/Execution activities included in the scope of work of the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract committed by the Contractor, we, the Associate, do hereby undertake, declare and confirm that we shall be fully responsible for successful performance of all Project Execution activities included in the scope of the Contract and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to project management/project execution activities included in the scope of the Contract, we, the Associate and Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/damages shall be in line with provision on Limitation of Liability of the said contract. However, the financial liability of the Associate shall be limited to the value of sub-contract between the Contractor and the Associate. This is without prejudice to any rights of the Employer against the Contractor under the Contract and all guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Associate (with respect to obligations and responsibilities covered under this Deed of joint undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Associate and Contractor.
3. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objectives set-forth in paragraph 1 above shall be as follows:
 - a. The Associate will be fully responsible for entire project management/project execution activities covered under the scope of work of the package including Engineering Management, Procurement Management, Construction Management and Commissioning / Supervision of commissioning, as specified in the Contract to the satisfaction of the Employer.

Further, the Associate shall depute their technical experts from time to time to the Contractor's works/ Employer's office/project site as required by the Employer and agreed to by the Contractor and Associate to facilitate the successful performance of all equipment covered under the package as stipulated in the Contract.

- b. In the event the Associate and the Contractor fail to demonstrate that the equipment covered under the Contract meets the guaranteed parameters and demonstration parameters as specified in the Contract, the Associate and the Contractor shall promptly carry out all the corrective measures related to Project Management/Project Execution activities at their own expense and shall promptly provide corrected design to the Employer.
 - c. Entire Project Management/Project Execution activities pertaining to the scope of work covered under the package shall be the joint and several responsibility of the Contractor and Associate.

4. We, the Contractor and the Associate do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days after the scheduled end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. We, the Contractor and the Associate, do further undertake and confirm that this Deed of joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract.
5. The Contractor and Associate will be fully responsible for the quality of entire Project Management / Project Execution activities covered under the package specification, as specified in the Contract to the satisfaction of the Employer.
6. In case of award, in addition to the Contract Performance Security furnished by the Contractor, the Associate shall furnish as security an on demand Performance Bank Guarantee in favour of the Employer as per provisions of the bidding documents. The value of such Bank Guarantee shall be **INR 20 Million (Indian Rupees Twenty Million)** and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The Bank Guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
7. Any dispute that may arise between the Employer and the Contractor in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Associate in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

8. We, the Associate and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

9. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Associate and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.

.....
(Official Address)

For M/s.
(Associate)

.....
(Signature of the Authorised Representative)

Name

Designation

Common Seal of the
Company.....

WITNESS :

1.

.....
(Official Address)

For M/s
(Bidder/Contractor)

.....
(Signature of the Authorised Representative)

Name

Designation

Common Seal of the
Company.....

Note: Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 & *1.1.4, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER / CONTRACTOR, *THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER, THE INDIAN SUBSIDIARY/JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND THE OTHER PROMOTOR HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE SUBSIDIARY COMPANY/JV COMPANY AND *THE QUALIFIED GENERATOR MANUFACTURER FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

This DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at (hereinafter called the "the Qualified Steam Turbine Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/JV Company* (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) *and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.1.1 (B), item 4.0 of BDS should have formed a Subsidiary Company / Joint Venture Company in India for Manufacturing of

Supercritical Steam Turbine Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.1.1 (A) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, the bidder shall associate with **EITHER** i) *the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate.

AND WHEREAS clause 1.1.3 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by the bidder/contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venture company.

*AND WHEREAS clause 1.1.4 item 4.0 of BDS of Bidding Documents, stipulate that *the bidder/*the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.4 of item 4.0 of BDS and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.1.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary

Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).

2. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, *the technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
3. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries** including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (**defined at Annexure-I**).
5. That in consideration of the award of the Contract by the Employer to the Contractor, we the *Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).
6. In case of any breach of the Contract committed by the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of **contract for the scope related to the Steam Turbine Generator Sets & auxiliary including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the *the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor.

*The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for

incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.

- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
8. Without prejudice to the joint and several obligations of the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the *the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to

proceed against the Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries **(defined at Annexure-I)** so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
10. The Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the

Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS:

1.....

.....
(Official Address)

For M/s
(BIDDER/CONTRACTOR)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(*the Qualified Steam Turbine Generator
Manufacturer)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(OTHER PROMOTER)

WITNESS :

.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*Qualified Generator
Manufacturer)

WITNESS :

.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Note:

- 1 ***Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.***
- 2 ****Bidder to strike out, whichever is not applicable.***

ANNEXURE-I

Indicative list of equipment / systems**A) Turbine**

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 & *1.1.4 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA
SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (HOLDING COMPANY ALONGWITH ITS SUBSIDIARY(IES)), *THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY ALONGWITH ITS SUBSIDIARY(IES)), AND THE INDIAN SUBSIDIARY/JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2(a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS AND OTHER PROMOTOR HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE SUBSIDIARY COMPANY/JV COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER FOR SUCCESSFUL PERFORMANCE OF THE STEAMTURBINE GENERATORANDAUXILIARIES

This DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor/ Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "the Qualified Steam Turbine Generator Manufacturer /Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)*and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the

EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.1.1 (B), item 4.0 of BDS should have formed a Subsidiary Company / Joint Venture Company in India for Manufacturing of Supercritical Steam Turbine Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.1.1 (A) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, the bidder shall associate with **EITHER** i) *the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

AND WHEREAS clause 1.1.3 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by the bidder/contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venture company.

*AND WHEREAS clause 1.1.4 item 4.0 of BDS of Bidding Documents, stipulate that *the bidder/*the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.4 of item 4.0 of BDS and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** , against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** , fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.1.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
2. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, *the technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
3. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally liable for the successful performance of all the contractual obligations under the said Contracts.
- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (**defined at Annexure-I**).
5. That in consideration of the award of the Contract by the Employer to the Contractor, we the *Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to

the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).

6. In case of any breach of the Contract committed by the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of **contract for the scope related to the Steam Turbine Generator Sets & auxiliary equipments including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the *the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor.

*The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
 - c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, dearators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam

Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

8. Without prejudice to the joint and several obligations of the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the *the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
9. *Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
 - a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
 - b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.
 - c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at

his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.

- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
10. The Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of

Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

12. In case of award, in addition to the Contract Performance Securities to be furnished by the Contractor, on demand Bank Guarantee(s) in favour of the Employer as specified in Qualifying Requirements stipulated at item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator

Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

	For M/s
	(BIDDER/CONTRACTOR/HOLDING COMPANY)
WITNESS:	
1.....	.....
.....	(Signature of the Authorised Representative)
(Official Address)	Name.....
	Designation.....
	Common Seal of the Company
	For M/s.....
	(*the Qualified Steam Turbine Generator Manufacturer/Holding Company)
WITNESS :	
1.....	.....
.....	(Signature of the Authorised Representative)
(OfficialAddress)	Name.....
	Designation.....
	Common Seal of the Company.....
	For M/s.....
	(Indian Manufacturing Company)
WITNESS :	
1.....	.....
.....	(Signature of the Authorised Representative)
(OfficialAddress)	Name.....
	Designation.....
	Common Seal of the Company.....
	For M/s.....
	(OTHER PROMOTER)
WITNESS :	
.....	

.....
(OfficialAddress)

(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*Qualified Generator
Manufacturer)

WITNESS :

.....
.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Note:

- (i) * *Bidder to strike out, whichever is not applicable.*
- (ii) *Bidder shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the bidder shall arrange for signing of DJU and bank guarantees by all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, before the change in management control actually occurs. Such bank guarantees to be furnished by the Holding Company and entities lending support for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the MAIN PLANT Package.*
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 & *1.1.4 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (*HOLDING COMPANY WHO ALONG WITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), *THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONG WITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF THE HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY FOR MEETING THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS, THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY AND OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2 (a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

This DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor/ Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "the Qualified Steam Turbine Generator Manufacturer /Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the bidder who are lending strength/ experience to the bidder for meeting the requirements stipulated in clause 1.1.1(B) item 4.0 of BDS and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns)and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)*and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.1.1 (B), item 4.0 of BDS should have set up a Subsidiary Company / Joint Venture Company in India for Manufacturing of Supercritical Steam Turbine Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.1.1 (A) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, the bidder shall associate with **EITHER** i) *the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) along with requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), along with requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

AND WHEREAS clause 1.1.3 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by the bidder/contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venture company.

AND WHEREAS clause 1.1.4 item 4.0 of BDS of Bidding Documents, stipulate that *the bidder/*the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator) , Subsidiary(ies), the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.4 of item 4.0 of BDS and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish

along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries** including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.1.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
2. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, *the technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
3. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally liable for the successful performance of all the contractual obligations under the said Contracts.

- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of **contract for the scope related to** Steam Turbine Generator sets and their internal auxiliaries **including** turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (**defined at Annexure-I**).
5. That in consideration of the award of the Contract by the Employer to the Contractor, we the *Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).
6. In case of any breach of the Contract committed by the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully liable for the successful performance of **contract for the scope related to** Steam Turbine Generator sets and their internal auxiliaries **including** turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the *the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor.

*The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings

for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.

- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.

- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.

- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, dearators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract,

including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

8. Without prejudice to the joint and several obligations of the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
 - a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
 - b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as

mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
 - e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
10. The Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/component covered under the Contract(s) for MAIN PLANT Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of

Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer or Subsidiary(ies), in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the

Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15. That this Deed of joint undertaking shall be operative from the effective date of theContract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR i.e. HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(*the Qualified Steam Turbine Generator
Manufacturer)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(Indian Joint Venture/ Indian Subsidiary
Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(OTHER PROMOTER)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s
(Qualified Generator Manufacturer)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) *The Bidder shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the bidder shall arrange for separate on demand bank guarantees by all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS for an amount aggregating to 0.6% of the total contract price of the EPC Package divided equally among them before the change in management control actually occurs.*
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

Indicative list of equipment / systems**A) Turbine**

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 & *1.1.4 AND NOTE NO. 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, *THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER, THE INDIAN *SUBSIDIARY/*JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2(a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ *JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE NO. 8 FOR CL 1.0.0 AND OTHER PROMOTORS HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE *SUBSIDIARY COMPANY/*JV COMPANY AND *THE QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.1.4 OF ITEM 4.0 OF BID DATA SHEET FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

This DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "the Qualified Steam Turbine Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns)and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian *Subsidiary Company/*JV Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)*and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India

110003, INDIA (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.1.1 (B), item 4.0 of BDS shall set up a Subsidiary Company / Joint Venture Company in India for Manufacturing of Supercritical Steam Turbine Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.1.1 (A) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, the bidder shall associate with **EITHER** i) *the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B)) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

AND WHEREAS clause 1.1.3 and note 8 of clause 1.0.0 of item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by the bidder/contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS, *Subsidiary Company of Indian Manufacturing Company as per note 8 of clause 1.0.0 and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venture company.

AND WHEREAS clause 1.1.4 item 4.0 of BDS of Bidding Documents, stipulate that *the bidder/*the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.4 of item 4.0 of BDS and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, Indian Manufacturing Company , *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.1.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the saidContract(s).
2. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
3. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally liable for the successful performance of all the contractual obligations under the saidContracts.
- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian

Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator sets and their internal auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (**defined at Annexure-I**).

5. That in consideration of the award of the Contract by the Employer to the Contractor, we the *Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).
6. In case of any breach of the Contract committed by the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully liable for the successful performance of the **contract for the scope related to** Steam Turbine Generator Sets & auxiliary equipments including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we,
*the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.

- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.
- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters,

deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

8. Without prejudice to the joint and several obligations of the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
 - a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries **(defined at Annexure-I)** so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
 - b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer to the successful commissioning and the performance of the Steam

Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
 - e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
10. The Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER

PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

1.WITNESS:

.....
(Signature, Name &
Address)

For M/s.....(
BIDDER /CONTRACTOR)

.....
(Signature of the Authorised
Representative)

.....
Name.....
Designation.....
Common Seal of the Company

1.WITNESS:

.....
(Signature, Name &
Address)

For M/s.....
(Indian *Subsidiary Company / *JV Company)

.....
(Signature of the Authorised
Representative)

.....
Name.....
Designation.....
Common Seal of the Company

1.WITNESS:

.....
(Signature, Name &
Address)

*For M/s.....
(Subsidiary Company of Indian Manufacturing
Company)

.....
(Signature of the Authorised
Representative)

.....
Name.....

Designation.....
Common Seal of the Company

1.WITNESS:

.....
(Signature, Name &
Address)

For M/s.....
.....(PROMOTER)
.....
(Signature of the Authorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company

5.WITNESS:

.....
(Signature, Name &
Address)

For M/s.....
(*Qualified Generator Manufacturer)
.....
(Signature of the Authorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company

Note:

- 1** *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.*
- 2** **Bidder to strike out, whichever is not applicable.*

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 & *1.1.4 AND NOTE *4 & *8 OF CLAUSE 1.0.0,
ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/CONTRACTOR (HOLDING COMPANY ALONG WITH ITS SUBSIDIARIES), *THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY ALONG WITH ITS SUBSIDIARIES), THE INDIAN *SUBSIDIARY/*JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2(a)/1.1.2(b), ITEM 4.0 OF BID DATA SHEETS, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL TURBINE GENERATOR IN INDIA AS PER NOTE NO. 8 FOR CL 1.0.0 AND *OTHER PROMOTORS HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE *SUBSIDIARY COMPANY/*JV COMPANY *AND *THE QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.1.4 OF ITEM 4.0 OF BID DATA SHEET FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

This DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor/ Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at (hereinafter called the "the Qualified Steam Turbine Generator Manufacturer /Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)*and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC

Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.1.1 (B), item 4.0 of BDS shall set up a Subsidiary Company / Joint Venture Company in India for Manufacturing of Supercritical Steam Turbine Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary/ JV Company.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.1.1 (A) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, the bidder shall associate with **EITHER** i) *the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) along with requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), along with requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

AND WHEREAS clause 1.1.3 and note 8 of clause 1.0.0 of item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by the bidder/contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS, *Subsidiary Company of Indian Manufacturing Company as per note 8 of clause 1.0.0 and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venture company.

*AND WHEREAS clause 1.1.4 item 4.0 of BDS of Bidding Documents, stipulate that *the bidder/*the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.4 of item 4.0 of BDS and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries** including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.1.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
2. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
3. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.

4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally liable for the successful performance of all the contractual obligations under the said Contracts.
- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance the **contract for the scope related to** Steam Turbine Generator sets including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (**defined at Annexure-I**).
5. That in consideration of the award of the Contract by the Employer to the Contractor, we the *Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).
6. In case of any breach of the Contract committed by the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully liable for the successful performance of **contract for the scope related to** the Steam Turbine Generator Sets & auxiliary turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the

design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
8. Without prejudice to the joint and several obligations of the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

10. The Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the

equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.

11. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the

President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR i.e. HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company

For M/s.....
(*the Qualified Steam Turbine Generator Manufacturer/Holding Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

For M/s.....
(*Subsidiary Company of Indian
Manufacturing Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(OTHER PROMOTER)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s
(Qualified Generator Manufacturer)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

Note:

- (i) *** Bidder to strike out, whichever is not applicable.**
- (ii) ***Bidder shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the bidder shall arrange for signing of DJU and bank guarantees by all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, before the change in management control actually occurs. Such bank guarantees to be furnished by the Holding Company and entities lending support for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the MAIN PLANT Package.***
- (iii) ***Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.***

Indicative list of equipment / systems**A) Turbine**

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitationsystem.
3. Condensate, feed water and extractionsystem.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.1.3 & *1.1.4 AND NOTE *4 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (*HOLDING COMPANY WHO ALONG WITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), *THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONG WITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF THE HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY FOR MEETING THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS, THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL TURBINE GENERATOR IN INDIA AS PER NOTE NO. 7 FOR CL 1.0.0 AND OTHER PROMOTER OF THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2 (a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

This DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor/ Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "the Qualified Steam Turbine Generator Manufacturer /Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the bidder who are lending strength/ experience to the bidder for meeting the requirements stipulated in clause 1.1.1(B) item 4.0 of BDS and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns)and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian *Subsidiary Company/*JV Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.1.1 (B), item 4.0 of BDS should have set up a Subsidiary Company / Joint Venture Company in India for Manufacturing of Supercritical Steam Turbine Generator sets meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

*AND WHEREAS clause 1.1.2 (c) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.1.1 (A) and 1.1.2 (a)/1.1.2 (b) of item 4.0 of BDS, the bidder shall associate with **EITHER** i) *the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) along with requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), along with requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

AND WHEREAS clause 1.1.3 and note 8 of item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by the bidder/contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS, *Subsidiary Company of Indian Manufacturing Company as per note 8 of clause 1.0.0 and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venture company.

AND WHEREAS clause 1.1.4 item 4.0 of BDS of Bidding Documents, stipulate that *the bidder/*the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator) , Subsidiary(ies), the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.4 of item 4.0 of BDS and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of JointUndertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company , *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.1.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
2. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for supercritical Steam Turbine Generator in the form of complete transfer of

design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.

3. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally liable for the successful performance of all the contractual obligations under the said Contracts.
- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator sets and auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (**defined at Annexure-I**).
5. That in consideration of the award of the Contract by the Employer to the Contractor, we the *Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).
6. In case of any breach of the Contract committed by the Contractor, we *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully liable for the successful performance of the **contract for the scope related to** Steam Turbine Generator Sets & auxiliary including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract (s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any

obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
 - c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.
 - d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
 - e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator

Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.

- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
8. Without prejudice to the joint and several obligations of the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries **(defined at Annexure-I)** so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their

auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

10. The Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever

occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/ CONTRACTOR i.e. HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(*the Qualified Steam Turbine Generator
Manufacturer/Holding Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....

Common Seal of the
Company.....

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the

Company.....

For M/s.....
(*Subsidiary Company of
Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(OTHER PROMOTER)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s
(Qualified Generator Manufacturer)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) *The Bidder shall submit its board resolution along with the Deed of Joint Undertaking stating that in case of any likely change of management control of any of its subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the bidder shall arrange for separate on demand bank guarantees by all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS for an amount aggregating to 0.6% of the total contract price of the EPC Package divided equally among them before the change in management control actually occurs.*
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitationsystem.
3. Condensate, feed water and extractionsystem.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypasssystem.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM TURBINE
GENERATOR AND AUXILIARIES AS PER CLAUSE
*1.1.3/*1.3.2/*1.4.2/*1.5.2/*1.6.2/*1.7.3, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR
AND THE "INDIAN SUBSIDIARY COMPANY/ JOINT VENTURE COMPANY/ INDIAN
MANUFACTURING COMPANY" AS SPECIFIED UNDER CLAUSE 1.6.1 OF ITEM NO. 4 OF
BDS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND
AUXILIARIES**

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand
by M/s a Company incorporated under
..... having its Registered Office at.....(hereinafter
called the "Bidder/Contractor", which expression shall include its successors, administrators,
executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of
India having its Registered Office at created for manufacturing of
supercritical Steam Turbine Generator in India (hereinafter called the "Indian Manufacturing
Company / Associate", which expression shall include its successors, administrators, executors
and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by
the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC"
or "Employer" which expression shall include its successors, administrators, executors and
assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply,
transportation to site, construction, installation, testing, commissioning and conductance of
guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-
II (2x800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.:
DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB

AND WHEREAS Clause ***1.1.3/*1.3.2/*1.4.2/*1.5.2/*1.6.2/*1.7.3**, Item 4.0 of Bid Data Sheets (BDS) of
bidding documents stipulates that the bidder, shall furnish a Deed of Joint Undertaking executed by him
and the Indian Manufacturing Company who meets the requirement of 1.6.1 & 3.0.0 of item no. 4 of BDS
for Steam Turbine Generator sets and shall source the Steam Turbine Generator sets from the qualified
associate.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid
Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER
STATION PHASE-II (2x800MW)**, against the Employer's Bidding Documents No.
DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.

AND WHEREAS the Bidder and the Indian Manufacturing Company are required to jointly
execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly

and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

AND FURTHER WHEREAS the Bidder and the Indian Manufacturing Company are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor and the Indian Manufacturing Company do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
2. We, the Contractor and the Indian Manufacturing Company do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
3. We, the Contractor and the Indian Manufacturing Company do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we the Indian Manufacturing Company and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (**defined at Annexure- I**).
5. That in consideration of the award of the Contract by the Employer to the Contractor, we the Indian Manufacturing Company and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the execution

and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).

6. In case of any breach of the Contract committed by the Contractor, we the Indian Manufacturing Company, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of **contract for the scope related to the Steam Turbine Generator Sets & auxiliary including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2x800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**, we, the Indian Manufacturing Company and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract (s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Indian Manufacturing Company shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows :
- a) We, the the Indian Manufacturing Company, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries .
 - b) We, the Indian Manufacturing Company, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
 - c) We, the Indian Manufacturing Company, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Indian Manufacturing Company, shall extend our quality surveillance/ supervision/quality control to the contractor during manufacture, erection, commissioning and performance testing, both at works and/or at

Employer's project site. Without prejudice to the overall responsibilities of the Indian Manufacturing Company as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Indian Manufacturing Company shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Indian Manufacturing Company, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
 - e) We, the Indian Manufacturing Company, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system.
 - f) The Contractor / Indian Manufacturing Company shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Indian Manufacturing Company's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Indian Manufacturing Company's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of the Indian Manufacturing Company before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Indian Manufacturing Company shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Indian Manufacturing Company shall promptly carry out all corrective measures and modifications (as suggested by the Indian Manufacturing Company and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Indian Manufacturing Company shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
8. Without prejudice to the joint and several obligations of the Contractor and the Indian Manufacturing Company hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Indian Manufacturing Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Indian Manufacturing Company for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the

Indian Manufacturing Company covered under this Deed of Joint Undertaking, nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Indian Manufacturing Company and Contractor.

9. The Contractor and the Indian Manufacturing Company will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
10. We, the Contractor and the Indian Manufacturing Company, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor and the Indian Manufacturing Company do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
11. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

12. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

13. We, the Indian Manufacturing Company and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
14. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor and the Indian Manufacturing Company through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS: 1. (Official Address)	For M/s (BIDDER/CONTRACTOR) (Signature of the Authorised Representative) Name..... Designation..... Common Seal of the Company
WITNESS : 1. (Official Address)	For M/s..... (Indian Manufacturing Company) (Signature of the Authorised Representative) Name Designation..... Common Seal of the Company.....

Note:

- 1 ***Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.***
- 2 ****Bidder to strike out, whichever is not applicable.***

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
AS PER CLAUSE 1.2.2 & *1.2.3 OF ITEM 4.0 OF BID DATA SHEETS
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)**

Not Used

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2 & *1.3.3 OF ITEM 4.0 OF BID DATA SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.1.1(B) OF ITEM 4.0 OF BID DATA SHEET, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *OTHER PROMOTERS (IF ANY) HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE INDIAN SUBSIDIARY COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSE 1.3.3 OF ITEM 4.0 OF BID DATA SHEET FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/ Contractor/ *Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Turbine Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company (hereinafter jointly called the "OTHER PROMOTER", which expressions shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.3.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking.

*AND WHEREAS clause 1.3.2 and *1.3.3 of item 4.0 of Bid Data Sheet of Bidding Documents(BDS), stipulate that the bidder shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company and *Qualified Generator Manufacturer who meets the requirement of Clause 1.3.3 of item 4.0 of BDS.

AND WHEREAS clause 1.3.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.3.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the saidContract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor underthisTender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (defined at**Annexure-I**).
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per**Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any lossor

damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the

works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
 - e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
 - f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary

Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.

- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

1.WITNESS:

ForM/s.....
.....(BIDDER /CONTRACTOR)

.....
(Signature,Name&
Address)

.....
(Signature oftheAuthorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

1.WITNESS:

ForM/s.....
(Qualified Steam Turbine Generator Manufacturer)

.....
(Signature,Name&
Address)

.....
(Signature oftheAuthorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

WITNESS:

For M/s.....
(Indian Manufacturing Company)

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

1.WITNESS:

*ForM/s.....
(Qualified Generator Manufacturer)

.....
(Signature,Name&
Address)

.....
(Signature oftheAuthorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

1. WITNESS:

For M/s.....
.....(*OTHER PROMOTER)

.....
(Signature, Name &
Address)

.....
(Signature of the Authorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

Note:

- 1 Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**
- 2 *Bidder to strike out, whichever is not applicable.**

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitationsystem.
3. Condensate, feed water and extractionsystem.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypasssystem.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2 & *1.3.3 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA
SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/CONTRACTOR (INDIAN SUBSIDIARY COMPANY), THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY MEETING THE REQUIREMENTS AS PER CLAUSES 1.1.1(B) OF ITEM 4.0 OF BID DATA SHEETS ALONGWITH ITS SUBSIDIARIES) *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.3.3 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/ Contractor/ *Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Steam Turbine Generator Manufacturer"/ "Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/ JV Company (herein after jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**

(hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS clause 1.3.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), OR ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.3.2 and *1.3.3 of item 4.0 of Bid Data Sheet of Bidding Documents(BDS), stipulate that the bidder **who meets the requirements stipulated in clause 1.3.1(a), item 4.0 of Bid Data Sheet as Indian Subsidiary Company of Qualified Steam Turbine Generator Manufacturer** shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company/ JV Company and *Qualified Generator Manufacturer who meets the requirement of Clause 1.3.3 of item 4.0 of BDS. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

AND WHEREAS clause 1.3.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.3.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 *That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 *We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 *We, the Qualified Steam Turbine Generator Manufacturer and the *Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam

Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
 - c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their

own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.

- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
 - e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this

deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS:

1.....

.....
(Official Address)

For M/s.....
(Bidder / Contractor)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

For M/s
(Qualified Steam Turbine Generator Manufacturer/ Holding Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company

For M/s.....
(Indian *Subsidiary / JV / Manufacturing Company Manufacturing Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)

.....
(Official Address)

Name.....
Designation.....
Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

Note:

(i) * Bidder to strike out, whichever is not applicable.

(ii) *In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package for the awarded projects.*

(iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2 & *1.3.3 AND NOTE 4 TO CLAUSE 1.0.0,
ITEM 4.0 OF BID DATA SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (INDIAN SUBSIDIARY COMPANY), THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.3.3 OF ITEM 4.0 OF BID DATA SHEET FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/ Contractor/ *Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Steam Turbine Generator Manufacturer"/ "Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the Holding Company who are lending strength/ experience to the Holding Company for meeting the requirements stipulated in clause 1.1.1(B) of item no. 4.0 of Bid Data Sheet and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian *Subsidiary Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.3.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), OR ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.3.2 and *1.3.3 of item 4.0 of Bid Data Sheet of Bidding Documents(BDS), stipulate that the bidder shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company and *Qualified Generator Manufacturer who meets the requirement of Clause 1.3.3 of item 4.0 of BDS. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

AND WHEREAS clause 1.3.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company, Subsidiary(ies) shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.3.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.

- 3 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
 - c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.
 - d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
 - e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
 - f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be

finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries **(defined at Annexure-I)** so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine

Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.

- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures

and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint

Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

.....
(Official Address)

For M/s
(Qualified Steam Turbine Generator Manufacturer
/ Holding Company)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)

.....
(Official Address)

Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

For M/s.....

(Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress).....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address).....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....

.....
(Official Address).....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company**Note:**

- (i) *** Bidder to strike out, whichever is not applicable.**
- (ii) **In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package for the awarded projects.**
- (iii) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2, *1.3.3 AND NOTES NO. *8 OF CLAUSE 1.0.0 OF ITEM 4.0 OF BID
DATA SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.3.3 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

This DEED OF JOINT UNDERTAKING executed on this..... day of..... Two Thousand by M/s a company registered under the Indian Companies Act, having its Registered Office at..... (hereinafter called the "Bidder/Contractor" which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Turbine Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.3.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

*AND WHEREAS clause 1.3.2 and *1.3.3 of item 4.0 of Bid Data Sheet of Bidding Documents(BDS), stipulate that the bidder shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company and *Qualified Generator Manufacturer who meets the requirement of Clause 1.3.3 of item 4.0 of BDS. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

AND WHEREAS clause 1.3.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for successful performance of the **contract for the scope related to** Steam Turbine Generator and

Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.3.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally

liable to the Employer for successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).

- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any

need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.

- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied

by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the

OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

.....
(Official Address)

1. WITNESS:

For M/s.....
(Qualified Steam Turbine Generator Manufacturer)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....

.....
(Signature, Name & Address)

Common Seal of the Company

.....

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Subsidiary Company of Indian Manufacturing Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

1.WITNESS:

*ForM/s.....
(Qualified Generator Manufacturer)

.....
(Signature,Name&
Address)

.....
(Signature oftheAuthorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

Note:

- 1 *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.*
- 2 **Bidder to strike out, whichever is not applicable.*

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2,*1.3.3 AND NOTE NO. *4 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID
DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.3.3 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor/ *Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Turbine Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company (hereinafter jointly called the "OTHER PROMOTER", which expressions shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors

and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.3.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

*AND WHEREAS clause 1.3.2 and *1.3.3 of item 4.0 of Bid Data Sheet of Bidding Documents(BDS), stipulate that the bidder shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company and *Qualified Generator Manufacturer who meets the requirement of Clause 1.3.3 of item 4.0 of BDS. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company

AND WHEREAS clause 1.3.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company, shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for

successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.3.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian

Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system**, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).

- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any

need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.

- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied

by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the

OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

For M/s
(Qualified Steam Turbine Generator Manufacturer/Holding Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Subsidiary Company of Indian Manufacturing Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) *In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Generator Package for the awarded projects.*
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system..
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.3.2 & *1.3.3 AND NOTE *4 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID
DATA SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.3.3 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor/ *Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s..... a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Steam Turbine Generator Manufacturer"/"Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at, M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the Holding Company who are lending strength/ experience to the Holding Company for meeting the requirements stipulated in clause 1.1.1(B) of item no. 4.0 of Bid Data Sheet and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing

Company”, which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company (hereinafter jointly called the "OTHER PROMOTER", which expressions shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the “Qualified Generator Manufacturer”, which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called “DVC” or “Employer” which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.3.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.3.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) along with requirements of clause 1.1.2 (a)/1.1.2 (b), OR ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), along with requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary /JV Company.

*AND WHEREAS clause 1.3.2 and *1.3.3 of item 4.0 of Bid Data Sheet of Bidding Documents (BDS), stipulate that the bidder shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company and *Qualified Generator Manufacturer who meets the requirement of Clause 1.3.3 of item 4.0 of BDS. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

AND WHEREAS clause 1.3.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company, shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.3.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies),

*Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.

- 3 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.

- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
 - f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies),
 *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It

shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified

Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
- 12 In case of award, in addition to the Contract Performance Security to be furnished by

the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or Subsidiary(ies) or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(Qualified Steam Turbine Generator Manufacturer/Holding Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the

Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s
(Subsidiary Company of Indian Subsidiary Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....

Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package for the awarded projects.
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2 & *1.4.3 OF ITEM 4.0 OF BID DATA SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.1.1(B) OF ITEM 4.0 OF BID DATA SHEET, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *OTHER PROMOTERS (IF ANY) HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE INDIAN SUBSIDIARY COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSE 1.4.3 OF ITEM 4.0 OF BID DATA SHEET FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor/ *Indian Joint Venture Company /Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Turbine Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.4.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.4.1(a) of item 4.0 of BDS, the bidder shall associate with **EITHER** i)

*Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) along with requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), along with requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking.

*AND WHEREAS clause 1.4.2 and *1.4.3 of item 4.0 of Bid Data Sheet of Bidding Documents (BDS), stipulate that the bidder, shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company and *Qualified Generator Manufacturer who meets the requirement of Clause 1.4.3 of item 4.0 of BDS.

*AND WHEREAS clause 1.4.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.4.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally responsible and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the saidContract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor underthisTender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transferagreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction ofEmployer.
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per**Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**and undertake to carryout all the obligations and responsibilities

under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters,

deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.

b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.

d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in

every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/ acceptance.

- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be

without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator

Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

1.WITNESS:

ForM/s.....
.....(BIDDER /CONTRACTOR)

.....
(Signature,Name&
Address)

.....
(Signature oftheAuthorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

1.WITNESS:

ForM/s.....
(Qualified Steam Turbine Generator Manufacturer)

.....
(Signature,Name&
Address)

.....
(Signature oftheAuthorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

WITNESS:

For M/s.....
(Indian Manufacturing Company)

1.....

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

.....
(OfficialAddress)

1.WITNESS:

*ForM/s.....
(Qualified Generator Manufacturer)

.....
(Signature,Name&
Address)

.....
(Signature oftheAuthorised
Representative)
.....
Name.....
Designation.....

Common Seal of the Company

.....

1. WITNESS:

ForM/s.....
.....(*OTHERPROMOTER)

.....
(Signature, Name &
Address)

.....
(Signature of the Authorised
Representative)

.....
Name.....
Designation.....
Common Seal of the Company

.....

Note:

- 1 Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**
- 2 *Bidder to strike out, whichever is not applicable.**

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2 & *1.4.3 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA
SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY MEETING THE REQUIREMENTS AS PER CLAUSES 1.1.1(B) OF ITEM 4.0 OF BID DATA SHEETS ALONGWITH ITS SUBSIDIARIES) *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.4.3 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor/ *Indian Joint Venture Company /Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s..... a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Steam Turbine Generator Manufacturer"/"Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary/Joint Venture Company (hereinafter jointly called the "OTHER PROMOTER", which expressions shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**(hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.4.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.4.1(a) of item 4.0 of BDS, the bidders shall associate with **EITHER** i)

*Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.4.2 and *1.4.3 of item 4.0 of Bid Data Sheet of Bidding Documents (BDS), stipulate that the bidder, shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company / **Joint venture company** and *Qualified Generator Manufacturer who meets the requirement of Clause 1.4.3 of item 4.0 of BDS. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.4.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.4.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally responsible and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the *Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer.
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam

Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their

own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.

- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
 - e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end

of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS:

1.....

.....
(OfficialAddress)

For M/s.....
(Bidder / Contractor)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS:

1.....

.....
(Official Address)

For M/s
(Qualified Steam Turbine Generator
Manufacturer / Holding Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

WITNESS:

1.....

.....
(OfficialAddress)

*For M/s.....
(Indian Manufacturing Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS:

1.....

.....

For M/s
(OTHER PROMOTER)

.....
(Signature of the Authorised
Representative)
Name.....

(OfficialAddress)

Designation.....
Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

Note:

(i) * Bidder to strike out, whichever is not applicable.

(ii) *In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package for the awarded projects.*

(iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2 & *1.4.3 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA
SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.4.3 OF ITEM 4.0 OF BID DATA SHEET FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor/ *Indian Joint Venture Company /Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s..... a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Steam Turbine Generator Manufacturer"/"Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at, M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the Holding Company who are lending strength/ experience to the Holding Company for meeting the requirements stipulated in clause 1.1.1(B) of item no. 4.0 of Bid Data Sheet and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at+..... created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary/Joint Venture Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.4.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.4.1(a) of item 4.0 of BDS, the bidder shall associate with **EITHER** i)

*Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) along with requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), along with requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.4.2 and *1.4.3 of item 4.0 of Bid Data Sheet of Bidding Documents (BDS), stipulate that the bidder, shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company and *Qualified Generator Manufacturer who meets the requirement of Clause 1.4.3 of item 4.0 of BDS. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.4.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of

the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.4.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and

undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer.

- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as **perAnnexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.

- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.
- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in theContracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer'sapproval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceedingfurther.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.

- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies),
*the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law

(UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

.....
(Official Address)

For M/s
(Qualified Steam Turbine Generator Manufacturer / Holding Company)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company

.....
(Official Address)

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....

.....
(Official Address)

(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- (i) *** Bidder to strike out, whichever is not applicable.**
- (ii) **In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package for the awarded projects.**
- (iii) **Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2, *1.4.3 AND NOTES NO. *6 & *8 OF CLAUSE 1.0.0 OF ITEM 4.0 OF
BID DATASHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *PARENT COMPANY OF INDIAN MAJORITY STAKE HOLDER OF THE JV COMPANY, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.4.3 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor/ *Indian Joint Venture Company /Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Turbine Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Parent Company of Indian Majority Stake Holder of the JV Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly

called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.4.1 (b) and note *6 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.4.1 (a) of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

*AND WHEREAS clause 1.4.2 and *1.4.3 and note *6 of clause 1.0.0 of item 4.0 of Bid Data Sheet of Bidding Documents(BDS), stipulate that the bidder, shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company, *Parent Company of Indian Majority Stake Holder of the JV Company and *Qualified Generator Manufacturer who meets the requirement of Clause 1.4.3 of item 4.0 of BDS. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JVCompany.

*AND WHEREAS clause 1.4.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.4.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the

Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.

- 3 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement between us and the Indian Manufacturing Company.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer.
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and allguarantees.

7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in

every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.

- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of

Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there

is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
 - 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
 - 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be

furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Parent Company of Indian Majority Stake Holder of the JV Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

1.WITNESS:

.....
(Signature, Name &
Address)

For M/s.....
(Qualified Steam Turbine Generator
Manufacturer)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the Company
.....

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s.....
(Parent Company of Indian Majority Stake
Holder of the JV Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)

.....
(Official Address)

Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Subsidiary Company of Indian
Manufacturing Company)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

1.WITNESS:

*ForM/s.....
(Qualified Generator Manufacturer)

.....
(Signature, Name &
Address)

.....
(Signature of the Authorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

Note:

- 1 Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**
- 2 *Bidder to strike out, whichever is not applicable.**

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2, *1.4.3 AND NOTE NO. *4, *6 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID
DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *PARENT COMPANY OF INDIAN MAJORITY STAKE HOLDER OF THE JV COMPANY, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.4.3 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor/ *Indian Joint Venture Company /Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Turbine Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Parent Company of Indian Majority Stake Holder of the JV Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary/ Joint Venture Company

(hereinafter jointly called the "OTHER PROMOTER", which expressions shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

****AND WHEREAS** clause 1.4.1 (b) and note *6 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.4.1 (a) of item 4.0 of BDS, the bidder shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) along with requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), along with requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

***AND WHEREAS** clause 1.4.2 and *1.4.3 and note *6 of clause 1.0.0 of item 4.0 of Bid Data Sheet of Bidding Documents (BDS), stipulate that the bidder, shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company, *Parent Company of Indian Majority Stake Holder of the JV Company and *Qualified Generator Manufacturer who meets the requirement of Clause 1.4.3 of item 4.0 of BDS. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

***AND WHEREAS** clause 1.4.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company,

*Subsidiary Company of Indian Manufacturing Company shall associate and have a technology

transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.4.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum upto the end of the defect

liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.

- 3 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement between us and the Indian Manufacturing Company.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and allguarantees.

7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.

- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
 - f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company,

*the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.

- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract

Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Parent Company of Indian Majority Stake Holder of the JV Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER

and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS:

1.....

.....
(OfficialAddress)

For M/s.....
(Bidder / Contractor)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS:

1.....

.....
(Official Address)

For M/s
(Qualified Steam Turbine Generator Manufacturer/Holding Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

WITNESS:

1.....

.....
(OfficialAddress)

*For M/s.....
(Indian Manufacturing Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS:

1.....

.....
(OfficialAddress)

*For M/s.....
(Parent Company of Indian Majority Stake
Holder of the JV Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Subsidiary Company of Indian
Manufacturing Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) *In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Generator Package for the awarded projects.*

- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitationsystem.
3. Condensate, feed water and extractionsystem.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypasssystem.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.4.2 & *1.4.3 AND NOTE *4, *6 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID
DATA SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *PARENT COMPANY OF INDIAN MAJORITY STAKE HOLDER OF THE JV COMPANY, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.4.3 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor/ *Indian Joint Venture Company /Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s..... a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Steam Turbine Generator Manufacturer"/"Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the Holding Company who are lending strength/ experience to the Holding Company for meeting the requirements stipulated in clause 1.1.1(B) of item no. 4.0 of Bid Data Sheet and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Parent Company of Indian Majority Stake Holder of the JV Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary/Joint Venture Company (hereinafter jointly called the "OTHER PROMOTER", which expressions shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.4.1 (b) and note *6 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Joint Venture of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.4.1 (a) of item 4.0 of BDS, the bidder shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

*AND WHEREAS clause 1.4.2 and *1.4.3 and note *6 of clause 1.0.0 of item 4.0 of Bid Data Sheet of Bidding Documents (BDS), stipulate that the bidder, shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *Parent Company of Indian Majority Stake Holder of the JV Company, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company and *Qualified Generator Manufacturer who meets the requirement of

Clause 1.4.3 of item 4.0 of BDS. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

AND WHEREAS clause 1.4.2 and note 8 of clause 1.0.0 of item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by the bidder/contractor, *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS, *Subsidiary Company of Indian Manufacturing Company as per note 8 of clause 1.0.0 and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venturecompany.

*AND WHEREAS clause 1.4.3 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.4.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies) and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer. (Defined at **Annexure-I**)
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.

- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal

performance of turbine cycle as per guaranteed parameters specified in the Contract.

- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly

provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
 - b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.

- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Parent Company of Indian Majority Stake Holder of the JV Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer, or Subsidiary(ies) or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

.....
(Official Address)

For M/s
(Qualified Steam Turbine Generator Manufacturer/Holding Company)

WITNESS :

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....

.....
(Official Address)

Common Seal of the
Company

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....

Common Seal of the
Company.....

*For M/s.....
(Parent Company of Indian Majority Stake
Holder of the JV Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s
(Subsidiary Company of Indian Subsidiary Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....

Common Seal of the
Company

Note:

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package for the awarded projects.
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2 & *1.5.3 OF ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (B) (*ALONGWITH REQUIREMENTS OF 1.1.2 (a)/1.1.2 (b) AND 3.0.0) ITEM 4.0 OF BID DATA SHEETS, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING 25% OR MORE EQUITY PARTICIPATION IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.5.3, ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of..... Two Thousand by M/s a company registered under the having its Registered Office at..... (hereinafter called the "Bidder/Contractor" which expression shall include its successors, administrators, executors and permitted assigns) and

M/s..... a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Steam Turbine Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply,

transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS clause 1.5.2 and *1.5.3 of item 4.0 of Bid Data Sheet of Bidding Documents(BDS), stipulate that the bidder, who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an Indian Company who holds atleast 51% equity in Joint Venture Company for manufacturing supercritical steam Turbine Generator in India shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer meeting the requirements specified in Clause 1.1.1(B) and the Indian Joint Venture Company who meets the requirements stipulated in clause 1.5.1 (a) , item 4.0 of Bid Data Sheet.

*AND WHEREAS clause 1.5.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India, shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.5.2 item 4 of BDS.

*AND WHEREAS clause 1.5.3 item 4.0 of BDS of Bidding Documents, stipulate that if Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.5.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of

Joint Undertaking and be jointly and severally responsible and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the saidContract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor underthisTender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system , as specified under the said contract to the satisfaction of Employer (Defined at**Annexure-I**).
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per**Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare

and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
 - c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and

performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful

performance meeting the guaranteed parameters and demonstration parameters.

- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.

- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
 - e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
10. The Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of

this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be

enforceable till its validity.

- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

1.WITNESS:

..... (Signature, Name & Address)	ForM/s..... .....(BIDDER /CONTRACTOR) (Signature of the Authorised Representative) Name..... Designation..... Common Seal of the Company

1.WITNESS:

..... (Signature, Name & Address)	ForM/s..... (Qualified Steam Turbine Generator Manufacturer) (Signature of the Authorised Representative) Name..... Designation..... Common Seal of the Company

1.WITNESS:

..... (Signature, Name & Address)	*ForM/s..... (Qualified Generator Manufacturer) (Signature of the Authorised Representative) Name..... Designation..... Common Seal of the Company

*For M/s.....
(Indian Subsidiary/Joint Venture
Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

Note:

- 1 Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**
- 2 *Bidder to strike out, whichever is not applicable.**

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2 & *1.5.3 AND NOTE 4 FOR CLAUSE 1.0.0, ITEM 4.0 OF BID DATA
SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING 25% OR MORE EQUITY PARTICIPATION IN THE INDIAN*SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.5.3, ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of..... Two Thousand by M/s a company registered under the having its Registered Office at..... (hereinafter called the "Bidder/Contractor" which expression shall include its successors, administrators, executors and permitted assigns) and

M/s..... a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Steam Turbine Generator Manufacturer" / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS Clause 1.5.2 and *1.5.3, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds atleast 51% equity in Joint Venture Company for manufacturing supercritical steam Turbine Generator in India shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer and the Indian Manufacturing Company who meets the requirements stipulated in clause 1.5.1 (a) , item 4.0 of Bid Data Sheet. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.5.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India, shall associate with EITHER i) *Qualified Steam Turbine Generator Manufacturer, meeting the requirements of Clause 1.1.1 (B) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), OR ii)* Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator set and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.5.2 item 4 of BDS. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.5.3 item 4.0 of BDS of Bidding Documents, stipulate that if Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and the OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and Guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.5.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint

Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, *the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally responsible and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer. Defined at **Annexure-I)**
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally

responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.

- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.

- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine

Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
 - e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of

the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor,

agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

1. WITNESS:

.....
(Signature, Name & Address)

For M/s.....
.....(BIDDER / CONTRACTOR)
.....
(Signature of the Authorised Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

For M/s
(Qualified Steam Turbine Generator Manufacturer/
Holding Company)

WITNESS:

1.....
.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....
.....
(Official Address)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company

*For M/s.....
(Indian Subsidiary/Joint Venture
Company)

WITNESS:

1.....
.....
(Signature of the Authorised Representative)

.....
(OfficialAddress)

Name.....
Designation.....
Common Seal of the
Company.....

*For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)

.....
(OfficialAddress)

Name.....
Designation.....
Common Seal of the
Company

Note:

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) *In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package for the awarded projects.*
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2 & *1.5.3 AND NOTE 4 FOR CLAUSE 1.0.0, ITEM 4.0 OF BID DATA
SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS) AND SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING 25% OR MORE EQUITY PARTICIPATION IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.5.3, ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of..... Two Thousand by M/s a company registered under the having its Registered Office at..... (hereinafter called the "Bidder/Contractor" which expression shall include its successors, administrators, executors and permitted assigns) and

M/s..... a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Steam Turbine Generator Manufacturer" / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at, M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the bidder who are lending strength/ experience to the bidder for meeting the requirements stipulated in clause 1.1.1(B) of item 4.0 of BDS and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS Clause 1.5.2 and *1.5.3, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds atleast 51% equity in Joint Venture Company for manufacturing supercritical steam Turbine Generator in India shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer and the Indian Manufacturing Company who meets the requirements stipulated in clause 1.5.1 (a) , item 4.0 of Bid Data Sheet. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.5.1 (b) item 4.0 of BDS of Bidding Documents, stipulate that the bidder who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India, shall associate with EITHER i) *Qualified Steam Turbine Generator Manufacturer, meeting the requirements of Clause 1.1.1 (B) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), OR ii)* Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator set and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking as per clause 1.5.2 item 4 of BDS. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

*AND WHEREAS clause 1.5.3 item 4.0 of BDS of Bidding Documents, stipulate that if Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.4.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian

Manufacturing Company as part of the technology transfer agreement.

- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer. (Defined at **Annexure-I**)
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.
- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, dearators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine

Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
 - b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to

Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified

Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the

Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

.....
(Official Address)

For M/s.....
(Qualified Steam Turbine Generator Manufacturer/
Holding Company)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

.....
(Official Address)

*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

Note:

- (i) *** Bidder to strike out, whichever is not applicable.**
- (ii) ***In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package for the awarded projects.***
- (iii) ***Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.***

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitationsystem.
3. Condensate, feed water and extractionsystem.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypasssystem.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
AS PER CLAUSE 1.5.2, *1.5.3 AND NOTES NO. *7 & *8 OF CLAUSE 1.0.0 OF ITEM 4.0 OF
BID DATASHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR,
*WHOLLY OWNED SUBSIDIARY OF BIDDER AS PER NOTE 7 OF CLAUSE 1.0.0,
*SUBSIDIARY COMPANY OF INDIAN JOINT VENTURE COMPANY FOR MANUFACTURING
SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 FOR CLAUSE
1.0.0 AND QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER MEETING THE
REQUIREMENT OF CLAUSE 1.1.1 (A) (*ALONGWITH REQUIREMENTS OF 1.1.2 (a)/1.1.2 (b)
AND 3.0.0) ITEM 4.0 OF BID DATA SHEETS, *THE INDIAN SUBSIDIARY/ JOINT VENTURE
COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM GENERATOR
IN INDIA AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE
COMPANY HAVING 25% OR MORE EQUITY PARTICIPATION IN THE INDIAN *SUBSIDIARY/
JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER
MEETING THE REQUIREMENTS AS PER CLAUSES 1.5.3, ITEM 4.0 OF BID DATA SHEETS
FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND
AUXILIARIES**

The DEED OF JOINT UNDERTAKING executed on this..... day of..... Two
Thousand by M/s a company registered under the
..... having its Registered Office at.....
(hereinafter called the "Bidder/Contractor" which expression shall include its successors,
administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having
its Registered Office at (hereinafter called the "Wholly owned Subsidiary
Company of Bidder/Contractor", which expression shall include its successors, administrators,
executors and permitted assigns) and

*M/s....., a Company incorporated under registered
for manufacturing of Supercritical Turbine Generator in India, having its Registered Office at
..... (hereinafter called the "Subsidiary Company of Indian JV Company", which
expression shall include its successors, administrators, executors and permitted assigns) and

M/s..... a Company incorporated under having
its Registered Office at..... (hereinafter called the "Qualified Steam
Turbine Generator Manufacturer", which expression shall include its successors, administrators,
executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India
having its Registered Office at for manufacturing of supercritical Steam
Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary
Company/ Indian Manufacturing Company", which expression shall include its successors,
administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator
Manufacturer, registered under having its Registered Office at and having
25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the
"OTHER PROMOTER", which expression shall include its successors, administrators, executors and
permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS clause 1.5.2 and *1.5.3 and note *7 of clause 1.0.0 of item 4.0 of Bid Data Sheet of Bidding Documents(BDS), stipulate that the bidder, shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company, *Wholly owned Subsidiary Company of Bidder/Contractor and *Qualified Generator Manufacturer who meets the requirement of Clause 1.5.3 of item 4.0 of BDS. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

*AND WHEREAS clause 1.5.1 (b) and note *7 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India, shall associate with **EITHER** i)

*Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

*AND WHEREAS clause 1.5.3 item 4.0 of BDS of Bidding Documents, stipulate that if Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.5.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.

- 3 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer.
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer,
*Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian

Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and allguarantees.

7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator

Manufacturer's works and shall meet Qualified Steam Turbine Generator
Manufacturer's approval/acceptance.

- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to

proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the

Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
 - 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company,
 *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
 - 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Parent Company of Indian Majority Stake Holder of the JV Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*WHOLLY OWNED SUBSIDIARY OF BIDDER/ CONTRACTOR)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(*Subsidiary of Joint Venture Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(Qualified Steam Turbine Generator Manufacturer)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....

.....

.....
(OfficialAddress)

(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

WITNESS:

1.....

.....
(OfficialAddress)

*For M/s.....
(Indian Subsidiary/Joint Venture
Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS:

1.....

.....
(OfficialAddress)

*For M/s
(OTHER PROMOTER)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

Note:

1 *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.*

2 **Bidder to strike out, whichever is not applicable.*

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitationsystem.
3. Condensate, feed water and extractionsystem.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypasssystem.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2, *1.5.3 AND NOTE NO. *4, *7 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID
DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

**DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/CONTRACTOR,
*WHOLLY OWNED SUBSIDIARY OF BIDDER AS PER NOTE 7 OF CLAUSE 1.0.0,
*SUBSIDIARY COMPANY OF INDIAN JOINT VENTURE COMPANY FOR MANUFACTURING
SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 FOR CLAUSE
1.0.0 AND QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING
COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE
1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE
COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE
GENERATOR IN INDIA AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT
VENTURE COMPANY HAVING 25% OR MORE EQUITY PARTICIPATION IN THE INDIAN
*SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR
MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.5.3 OF ITEM 4.0 OF
BID DATA SHEET FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE
GENERATOR AND AUXILIARIES**

The DEED OF JOINT UNDERTAKING executed on this..... day of..... Two Thousand
..... by M/s a company registered under the
having its Registered Office at..... (hereinafter called the
"Bidder/Contractor" which expression shall include its successors, administrators, executors and
permitted assigns) and

*M/s....., a Company incorporated under having
its Registered Office at (hereinafter called the "Wholly owned Subsidiary
Company of Bidder/Contractor", which expression shall include its successors, administrators,
executors and permitted assigns) and

*M/s....., a Company incorporated under
registered for manufacturing of Supercritical Turbine Generator in India, having its Registered Office
at (hereinafter called the "Subsidiary Company of Indian JV Company",
which expression shall include its successors, administrators, executors and permitted assigns) and

M/s..... a Company incorporated under having
its Registered Office at..... (hereinafter called the "Qualified
Steam Turbine Generator Manufacturer" / Holding Company, which expression shall include its
successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India
having its Registered Office at for manufacturing of supercritical Steam
Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary
Company/ Indian Manufacturing Company", which expression shall include its successors,
administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator
Manufacturer, registered under having its Registered Office at and

having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS clause 1.5.2 and *1.5.3 and note *7 of clause 1.0.0 of item 4.0 of Bid Data Sheet of Bidding Documents(BDS), stipulate that the bidder, shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company, *Wholly owned Subsidiary Company of Bidder/Contractor and *Qualified Generator Manufacturer who meets the requirement of Clause 1.5.3 of item 4.0 of BDS. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JVCompany.

*AND WHEREAS clause 1.5.1 (b) and note *7 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India, shall associate with **EITHER** i)

*Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JVCompany.

*AND WHEREAS clause 1.5.3 item 4.0 of BDS of Bidding Documents, stipulate that if Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall

associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.5.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating

of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.

- 3 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer. (Defined at **Annexure-I**)
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and allguarantees.

7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.

- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
 - f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority

Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of

equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/ acceptance.

- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company,
- *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and

shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Parent Company of Indian Majority Stake Holder of the JV Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(*WHOLLY OWNED SUBSIDIARY OF BIDDER/ CONTRACTOR)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(*Subsidiary of Joint Venture Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(Qualified Steam Turbine Generator Manufacturer//Holding Company)

WITNESS:

1.....

.....

.....
(Signature of the Authorised
Representative)
Name.....

(OfficialAddress)

Designation.....
Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

.....
(OfficialAddress)

*For M/s.....
(Indian Subsidiary/Joint Venture
Company)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

.....
(OfficialAddress)

*For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

.....
(OfficialAddress)

Note:

(i) * Bidder to strike out, whichever is not applicable.

(ii) *In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(A), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of BDS before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(A), item 4.0 of BDS, shall be*

equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package for the awarded projects.

- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitationsystem.
3. Condensate, feed water and extractionsystem.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypasssystem.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.5.2, *1.5.3 AND NOTE NO. *4, *7 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID
DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/CONTRACTOR, *WHOLLY OWNED SUBSIDIARY OF BIDDER AS PER NOTE 7 OF CLAUSE 1.0.0, *SUBSIDIARY COMPANY OF INDIAN JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 FOR CLAUSE 1.0.0 AND QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS), THE SUBSIDIARY(IES) OF THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND *THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY 25% OR MORE EQUITY PARTICIPATION IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.5.3 OF ITEM 4.0 OF BID DATA SHEET FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of..... Two Thousand by M/s a company registered under the having its Registered Office at..... (hereinafter called the "Bidder/Contractor" which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Wholly owned Subsidiary Company of Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian JV Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s..... a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Steam Turbine Generator Manufacturer" / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the bidder who are lending strength/ experience to the bidder for meeting the requirements stipulated in clause 1.1.1(B) of item 4.0 of BDS and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS clause 1.5.2 and *1.5.3 and note *7 of clause 1.0.0 of item 4.0 of Bid Data Sheet of Bidding Documents(BDS), stipulate that the bidder, shall furnish a Deed of Joint Undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer, *Indian Subsidiary Company / Indian Joint Venture Company created for manufacturing of supercritical Steam Turbine Generator sets in India, *OTHER PROMOTER (if any) having 25% or higher equity participation in the Subsidiary Company, *Wholly owned Subsidiary Company of Bidder/Contractor and *Qualified Generator Manufacturer who meets the requirement of Clause 1.5.3 of item 4.0 of BDS. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

*AND WHEREAS clause 1.5.1 (b) and note *7 of clause 1.0.0, item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirements stipulated in clause 1.5.1(a), item 4.0 of Bid Data Sheet as an *Indian Company who holds at least 51% equity in Joint Venture Company for manufacturing supercritical steam Generator in India, shall associate with **EITHER** i)

*Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint

Undertaking. . Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

*AND WHEREAS clause 1.5.3 item 4.0 of BDS of Bidding Documents, stipulate that if Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.5.3 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).

- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies) and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer. (Defined at **Annexure-I**)
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in

order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and allguarantees.

7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and

performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine

Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to

Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
 - e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the

OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and

*Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Parent Company of Indian Majority Stake Holder of the JV Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer, or Subsidiary(ies) or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The

place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14 We, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Parent Company of Indian Majority Stake Holder of the JV Company, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

.....
(Official Address)

For M/s
(*WHOLLY OWNED SUBSIDIARY OF BIDDER/ CONTRACTOR)

WITNESS :

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company

.....
(Official Address)

For M/s.....
(Joint Venture Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*Subsidiary of Joint Venture
Company/Indian Manufacturing
company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....

.....
(Signature of the Authorised
Representative)
Name.....

(Official Address)

Designation.....
Common Seal of the
Company

For M/s
(Qualified Steam Turbine Generator Manufacturer/Holding Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Subsidiary/Joint Venture
Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....

Common Seal of the
Company

Note:

- (i) **** Bidder to strike out, whichever is not applicable.***
- (ii) ***** In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of Bid Data Sheet, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC Package for the awarded projects.***
- (iii) ***Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.***

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2 & *1.6.4 OF ITEM 4.0 OF BID DATA SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.1.1(B) OF ITEM 4.0 OF BID DATA SHEET, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *OTHER PROMOTERS (IF ANY) HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE INDIAN SUBSIDIARY COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSE 1.6.4 OF ITEM 4.0 OF BID DATA SHEET FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Turbine Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company (hereinafter jointly called the "OTHER PROMOTER", which expressions shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.6.2 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirement of Clause 1.6.1 of item 4.0 of BDS, shall associate with **EITHER** i)

*Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking.

AND WHEREAS clause 1.6.4 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.6.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the saidContract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor underthisTender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (defined at **Annexure-I**).
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per**Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains anylossor

damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the

works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
 - e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
 - f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary

Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.

b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.

d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.

- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

1.WITNESS:

For
M/s.....(BI
DDER /CONTRACTOR)

.....
(Signature, Name&
Address)

.....
(Signature of the Authorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

1.WITNESS:

ForM/s.....
(Qualified Steam Turbine Generator Manufacturer)

.....
(Signature, Name&
Address)

.....
(Signature of the Authorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

WITNESS:

For M/s.....
(Indian Manufacturing Company)

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

1.WITNESS:

*For M/s.....
(Qualified Generator Manufacturer)

.....
(Signature,Name&
Address)

.....
(Signature of the Authorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

1.WITNESS:

ForM/s.....
.....(*OTHERPROMOTER)

.....
(Signature, Name&
Address)

.....
(Signature of the Authorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company
.....

Note:

- 1 Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**
- 2 *Bidder to strike out, whichever is not applicable.**

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser, condenser air evacuation system and COLTCS.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2 & *1.6.4 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA
SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/CONTRACTOR (INDIAN SUBSIDIARY COMPANY), THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY MEETING THE REQUIREMENTS AS PER CLAUSES 1.1.1(B) OF ITEM 4.0 OF BID DATA SHEETS ALONGWITH ITS SUBSIDIARIES) *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.6.4 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/ Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Steam Turbine Generator Manufacturer"/"Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/ JV Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the MAIN PLANT Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**

(hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

*AND WHEREAS clause 1.6.2 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirement of Clause 1.6.1 of item 4.0 of BDS, shall associate with **EITHER** i)

*Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), OR ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

AND WHEREAS clause 1.6.4 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.6.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the *Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam

Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
 - c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company /Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their

own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries **(defined at Annexure-I)** so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.

- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
 - e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this

deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

	For M/s..... (Bidder / Contractor)
WITNESS:	
1.....	 (Signature of the Authorised Representative)
..... (Official Address)	Name..... Designation..... Common Seal of the Company.....
	For M/s (Qualified Steam Turbine Generator Manufacturer / Holding Company)
WITNESS:	
1.....	 (Signature of the Authorised Representative)
..... (Official Address)	Name..... Designation..... Common Seal of the Company
	For M/s..... (Indian Manufacturing Company)
WITNESS:	
1.....	 (Signature of the Authorised Representative)
..... (Official Address)	Name..... Designation..... Common Seal of the Company.....
	For M/s (OTHER PROMOTER)
WITNESS:	
1.....	 (Signature of the Authorised Representative)

.....
(Official Address)

Name.....
Designation.....
Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

Note:

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) *In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC PACKAGE for the awarded projects.*
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2 & *1.6.4 AND NOTE 4 TO CLAUSE 1.0.0,
ITEM 4.0 OF BID DATA SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR (INDIAN SUBSIDIARY COMPANY), THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.3.3 OF ITEM 4.0 OF BID DATA SHEET FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/ Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Steam Turbine Generator Manufacturer"/"Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the Holding Company who are lending strength/ experience to the Holding Company for meeting the requirements stipulated in clause 1.1.1(B) of item no. 4.0 of Bid Data Sheet and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at created for manufacturing of supercritical Steam Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian *Subsidiary Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.6.2 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirement of Clause 1.6.1 of item 4.0 of BDS, shall associate with **EITHER** i)

*Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), OR ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

AND WHEREAS clause 1.6.4 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company, Subsidiary(ies) shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.6.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.

- 3 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
 - c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.
 - d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
 - e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
 - f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be

finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHERPROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
 - 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
 - a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries **(defined at Annexure-I)** so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine

Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.

- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures

and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint

Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS:

1.....

.....
(Official Address)

For M/s.....
(Bidder / Contractor)

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(Qualified Steam Turbine Generator Manufacturer
/ Holding Company)

WITNESS :

1.....

.....
(Signature of the Authorised Representative)

.....
(Official Address)

Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....

(Indian Manufacturing Company)

WITNESS :

1.....

.....
(Official Address).....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address).....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company*For M/s
(Qualified Generator Manufacturer)

WITNESS:

1.....

.....
(Official Address).....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company**Note:**

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC PACKAGE for the awarded projects.
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2, *1.6.4 AND NOTES NO. *8 OF CLAUSE 1.0.0 OF ITEM 4.0 OF BID
DATA SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1 (A), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.6.4 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

This DEED OF JOINT UNDERTAKING executed on this..... day of..... Two Thousand by M/s a company registered under the Indian Companies Act, having its Registered Office at..... (hereinafter called the "Bidder/Contractor" which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Turbine Generator Manufacturer which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns)

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Manufacturing Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.6.2 item 4.0 of BDS of Bidding Documents, stipulate that the bidder who meets the requirement of Clause 1.6.1 of item 4.0 of BDS, shall associate with **EITHER** i)

*Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JVCompany.

AND WHEREAS clause 1.6.4 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for successful performance of the **contract for the scope related to** Steam Turbine Generator and

Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.6.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally

liable to the Employer for successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).

- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, dearators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any

need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, dearators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.

- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied

by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the

OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14 We, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the Company.....

.....
(Official Address)

1.WITNESS:

For M/s.....
(Qualified Steam Turbine Generator Manufacturer)

.....
(Signature of the Authorised Representative)

.....
Name.....
Designation.....

.....
(Signature, Name & Address)

Common Seal of the Company

.....

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Subsidiary Company of Indian Manufacturing Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

1.WITNESS:

*For M/s.....
(Qualified Generator Manufacturer)

.....
(Signature, Name&
Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the Company
.....

Note:

- 1** *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.*
- 2** ** Bidder to strike out, whichever is not applicable.*

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2,*1.6.4 AND NOTE NO. *4 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID
DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.6.4 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor/", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered under the having its Registered Office at (hereinafter called the Qualified Steam Turbine Generator Manufacturer / Holding Company, which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company (hereinafter jointly called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns)and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors

and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.6.2 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, who meets the requirement of Clause 1.6.1 of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JV Company.

AND WHEREAS clause 1.6.4 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company, shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for

successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.6.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
- 3 We, the Qualified Steam Turbine Generator Manufacturer and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian

Manufacturing Company, *the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system**, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).

- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

- 7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any

need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
 - 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
 - a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.

- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied

by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

- 10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
- 11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
- 12 In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 13 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the

OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 14 We, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
- 15 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)
Name.....
Designation.....
Common Seal of the
Company.....

.....
(Official Address)

For M/s
(Qualified Steam Turbine Generator Manufacturer/Holding Company)

WITNESS:

1.....

.....
(Signature of the Authorised Representative)
Name.....

.....
(Official Address)

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Subsidiary Company of Indian Manufacturing Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) *In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of Bid Data Sheet, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the MAIN PLANT Generator Package for the awarded projects.*
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.6.2 & *1.6.4 AND NOTE *4 & *8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID
DATA SHEET**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/ CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY WHO ALONGWITH ITS SUBSIDIARIES MEETS THE REQUIREMENT OF CLAUSE 1.1.1(B), ITEM 4.0 OF BID DATA SHEETS), SUBSIDIARIES OF HOLDING COMPANY LENDING STRENGTH/ EXPERIENCE TO THE HOLDING COMPANY, *THE INDIAN SUBSIDIARY/ JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY / JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE 8 OF CLAUSE 1.0.0 ITEM 4.0 OF BID DATA SHEETS AND THE OTHER PROMOTER OF THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY HAVING A STAKE OF 25% OR MORE IN THE INDIAN *SUBSIDIARY/ JOINT VENTURE COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER MEETING THE REQUIREMENTS AS PER CLAUSES 1.6.4 OF ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/ Contractor/ *Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s..... a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Steam Turbine Generator Manufacturer"/"Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at, M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the Holding Company who are lending strength/ experience to the Holding Company for meeting the requirements stipulated in clause 1.1.1(B) of item no. 4.0 of Bid Data Sheet and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company registered in India under the Companies Act of India having its Registered Office at for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the "Indian Joint Venture Company/ Indian Subsidiary Company/ Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing

Company”, which expression shall include its successors, administrators, executors and permitted assigns) AND

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company (hereinafter jointly called the "OTHER PROMOTER", which expressions shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the “Qualified Generator Manufacturer”, which expression shall include its successors, administrators, executors and permitted assigns), in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called “DVC” or “Employer” which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. **:DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

*AND WHEREAS clause 1.6.2 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, as Indian Subsidiary of Qualified Steam Generator Manufacturer who meets the requirement of Clause 1.6.4 of item 4.0 of BDS, shall associate with **EITHER** i) *Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) along with requirements of clause 1.1.2 (a)/1.1.2 (b), OR ii) * Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), along with requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate and shall furnish a Deed of Joint Undertaking. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary /JV Company.

AND WHEREAS clause 1.6.4 item 4.0 of BDS of Bidding Documents, stipulate that if the Qualified Steam Turbine Generator Manufacturer meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), then the Subsidiary Company / Joint Venture Company, *Subsidiary Company of Indian Manufacturing Company, shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) item 4.0 of BDS fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.6.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary/Joint Venture Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

- 1 That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and OTHER PROMOTER do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
- 2 We, the Contractor, Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer and the OTHER PROMOTER do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies),

*Subsidiary Company of Indian Manufacturing Company, The Indian Subsidiary/Joint Venture Company, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator sets in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.

- 3 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the Qualified Generator Manufacturer do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
- 4 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
- 5 That in consideration of the award of the Contract by the Employer to the Contractor, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *The Indian Subsidiary/Joint Venture Company, OTHER PROMOTERS, the *Qualified Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of the Generator and its auxiliary equipments as per **Annexure-I**.
- 6 In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system HP/LP bypass system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the*Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7 Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.

- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
 - f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
- 8 Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It

shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

- 9 * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.

b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.

d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.

e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified

Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

10 The Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.

11 We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, *the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

1 In case of award, in addition to the Contract Performance Securities to be furnished by

the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC PACKAGE in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

- 12 Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

*Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or Subsidiary(ies) or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

- 13 We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

- 14 That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Subsidiary Company of Indian Manufacturing Company, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s.....
(Bidder / Contractor)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(Qualified Steam Turbine Generator Manufacturer/Holding Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the

Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

*For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(OTHER PROMOTER)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

*For M/s
(Subsidiary Company of Indian Subsidiary Company)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....

Common Seal of the
Company

*For M/s
(Qualified Generator Manufacturer)

WITNESS :

1.....

.....

(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

Note:

- (i) * Bidder to strike out, whichever is not applicable.
- (ii) In case the Holding Company anticipates change of management control of any of its subsidiaries lending strength/ experience for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, the Holding Company shall arrange for signing of DJU and bank guarantees from all such subsidiaries lending strength / experience to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS before the change in management control actually occurs, in addition to the bank guarantee already furnished by the Holding Company. Such bank guarantees to be furnished by all the entities lending support to the Holding Company for fulfillment of requirement of clause 1.1.1(B), item 4.0 of BDS, shall be equally divided among them and shall aggregate to 0.6% of the total contract price of the EPC PACKAGE for the awarded projects.
- (iii) Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.

ANNEXURE-I

Indicative list of equipment /

systems A) Turbine

1. Turbine and auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system
4. Generator Excitation system
5. Any other auxiliary of Generator not covered above

**FORM OF DEED OF JOINT UNDERTAKING
AS PER CLAUSE 1.6.2 & *1.2.3 OF ITEM 4.0 OF BID DATA
SHEETS (ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE
VALUE)**

Not Used

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 & *1.7.4, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER / CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER, THE INDIAN SUBSIDIARY/JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA AND THE OTHER PROMOTOR HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE SUBSIDIARY COMPANY/JV COMPANY AND *THE QUALIFIED GENERATOR MANUFACTURER FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "the Qualified Steam Turbine Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

AND WHEREAS Clause 1.7.2 (ii), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate

with **EITHER** *i) the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** *ii) Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate.

AND WHEREAS clause 1.7.3 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable), the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venture company.

*AND WHEREAS clause 1.7.4 item 4.0 of BDS of Bidding Documents, stipulate that the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.7.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).

2. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
3. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally responsible for the successful performance of all the contractual obligations under the said Contracts.
- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
5. That in consideration of the award of the Contract by the Employer to the Contractor, we the *Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).
6. In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to

promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor.

*The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for

incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.

- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
8. Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to

proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries **(defined at Annexure-I)** so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
10. The Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank

Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/CONTRACTOR)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(the Qualified Steam Turbine Generator
Manufacturer)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(OTHER PROMOTER)

WITNESS :

.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*Qualified Generator
Manufacturer)

WITNESS :

.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Note:

- 1 *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.*
- 2 **Bidder to strike out, whichever is not applicable.*

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 & *1.7.4 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER / CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY ALONGWITH ITS SUBSIDIARY(IES)), AND THE INDIAN SUBSIDIARY/JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2(a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS AND OTHER PROMOTOR HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE SUBSIDIARY COMPANY/JV COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "the Qualified Steam Turbine Generator Manufacturer/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

AND WHEREAS Clause 1.7.2 (ii), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER** *i) the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** *ii) Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder.

AND WHEREAS clause 1.7.3 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable), the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venture company.

*AND WHEREAS clause 1.7.4 item 4.0 of BDS of Bidding Documents, stipulate that the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.7.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do

hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).

2. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
3. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transfer agreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally responsible for the successful performance of all the contractual obligations under the said Contracts.
- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
5. That in consideration of the award of the Contract by the Employer to the Contractor, we the *Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).
6. In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for

KODERMA THERMAL POWER STATION PHASE-II (2X800MW), we, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the

*Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor.

*The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
 - c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.
 - d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.

- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
 - f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
 - g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
8. Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and

responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.

9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify

the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.

- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
10. The Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the

equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/CONTRACTOR)

WITNESS:

1.....

.....
(Signature of the Authorised
Representative)
Name.....

.....
(Official Address)

Designation.....
 Common Seal of the
 Company
 For M/s.....
 (the Qualified Steam Turbine Generator
 Manufacturer/Holding Company)

WITNESS:

1.....

.....
 (OfficialAddress)

.....
 (Signature of the Authorised
 Representative)
 Name.....
 Designation.....
 Common Seal of the
 Company.....

For M/s.....
 (Indian Manufacturing Company)

WITNESS:

1.....

.....
 (OfficialAddress)

.....
 (Signature of the Authorised
 Representative)
 Name.....
 Designation.....
 Common Seal of the
 Company.....

For M/s.....
 (OTHER PROMOTER)

WITNESS:

.....

.....
 (OfficialAddress)

.....
 (Signature of the Authorised
 Representative)
 Name.....
 Designation.....
 Common Seal of the
 Company.....

For M/s.....
 (*Qualified Generator
 Manufacturer)

WITNESS:

.....

.....
 (OfficialAddress)

.....
 (Signature of the Authorised
 Representative)
 Name.....
 Designation.....
 Common Seal of the
 Company.....

Note:

- 1 Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**

2 *Bidder to strike out, whichever is not applicable.

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 & *1.7.4 AND NOTE 4 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER / CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY ALONGWITH ITS SUBSIDIARY(IES)), AND THE INDIAN SUBSIDIARY/JOINT VENTURE COMPANY MEETING THE REQUIREMENT OF CLAUSE 1.1.2(a)/1.1.2 (b), ITEM 4.0 OF BID DATA SHEETS AND OTHER PROMOTOR HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE SUBSIDIARY COMPANY/JV COMPANY AND THE *QUALIFIED GENERATOR MANUFACTURER FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "the Qualified Steam Turbine Generator Manufacturer/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the Qualified Steam Turbine Generator Manufacturer who are lending strength/ experience to the Qualified Steam Turbine Generator Manufacturer for meeting the requirements stipulated in clause 1.1.1(B) item 4.0 of BDS and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC

Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

AND WHEREAS Clause 1.7.2 (ii), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER** *i) the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** *ii) Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder.

AND WHEREAS clause 1.7.3 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable), Subsidiary(ies), the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venture company.

*AND WHEREAS clause 1.7.4 item 4.0 of BDS of Bidding Documents, stipulate that the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.7.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and

furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the saidContract(s).
2. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Qualified Generator Manufacturer, the *technology provider (if any) and the Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under thisTender.
3. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company as part of the technology transferagreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally responsible for the successful performance of all the contractual obligations under the saidContracts.
- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
5. ThatinconsiderationoftheawardoftheContractbytheEmployertotheContractor,thewe the *Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).

6. In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), Indian Subsidiary Company/ JV Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
 - c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company /

Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.
- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

8. Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, OTHER PROMOTER and Contractor.
9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries **(defined at Annexure-I)** so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
 - b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.
- Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.
- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor

which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/ acceptance.

- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
10. The Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
 11. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/JV Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as

other obligations of the Contractor in terms of the Contract(s).

12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer or Subsidiary(ies) in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/CONTRACTOR)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(the Qualified Steam Turbine Generator
Manufacturer/Holding Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(OTHER PROMOTER)

WITNESS:

.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*Qualified Generator
Manufacturer)

WITNESS:

.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Note:

- 1 Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**
- 2 *Bidder to strike out, whichever is not applicable.**

ANNEXURE-I

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 & *1.7.4 AND NOTE NO. 8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER / CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER, THE INDIAN SUBSIDIARY/JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ *JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE NO. 8 FOR CL 1.0.0 AND THE OTHER PROMOTOR HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE SUBSIDIARY COMPANY/JV COMPANY AND *THE QUALIFIED GENERATOR MANUFACTURER FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this..... day of Two thousand by M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "the Qualified Steam Turbine Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns)and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

AND WHEREAS Clause 1.7.2 (ii), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER** *i) the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** *ii) Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JVCompany.

AND WHEREAS clause 1.7.3 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable), the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS, *Subsidiary Company of Indian Manufacturing Company as per note 8 of clause 1.0.0 and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venturecompany.

*AND WHEREAS clause 1.7.4 item 4.0 of BDS of Bidding Documents, stipulate that the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.7.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of

Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the saidContract(s).
2. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, the *technology provider (if any), the Indian Manufacturing Company and *Subsidiary Company of Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under thisTender.
3. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company as part of the technology transferagreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally responsible for the successful performance of all the contractual obligations under the saidContracts.
- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JVCompany, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
5. ThatinconsiderationoftheawardoftheContractbytheEmployertotheContractor,thewe the *Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer and

the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of Generator and its auxiliary equipments.

6. In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.

- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with theContracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in theContracts.

- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer'sapproval/acceptance.

- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by

the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

8. Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and Contractor.

9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:

- a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
- b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.

- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
 - e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
10. The Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the

contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS:

1.....

.....
(Official Address)

For M/s
(BIDDER/CONTRACTOR)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

WITNESS :

1.....

.....
(OfficialAddress)

For M/s.....
(the Qualified Steam Turbine Generator
Manufacturer)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS :

1.....

.....
(OfficialAddress)

For M/s.....
(Indian Manufacturing Company)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

3.WITNESS:

.....
(Signature, Name &

*For M/s.....
(Subsidiary Company of Indian Manufacturing
Company)

.....
(Signature of the Authorised
Representative)

Address)

.....
Name.....
Designation.....
Common Seal of the Company

For M/s.....
(OTHER PROMOTER)

WITNESS:

.....

.....
(Signature of the Authorised
Representative)

.....
(OfficialAddress)

Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(*Qualified Generator
Manufacturer)

WITNESS:

.....

.....
(Signature of the Authorised
Representative)

.....
(OfficialAddress)

Name.....
Designation.....
Common Seal of the
Company.....

Note:

- 1 Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**
- 2 *Bidder to strike out, whichever is not applicable.**

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 & *1.7.4 AND NOTE NO. *4 & 8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID DATA
SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER / CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY ALONG WITH ITS SUBSIDIARIES), THE INDIAN SUBSIDIARY/JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ *JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE NO. 8 FOR CL 1.0.0 AND THE OTHER PROMOTOR HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE SUBSIDIARY COMPANY/JV COMPANY AND *THE QUALIFIED GENERATOR MANUFACTURER FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "the Qualified Steam Turbine Generator Manufacturer/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (hereinafter called the "OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter

referred to as "Plant") vide its Bidding Document No. : **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

AND WHEREAS Clause 1.7.2 (ii), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER** *i) the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** *ii) Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate. Further as per note 4 iii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company, as a Qualified Steam Turbine Generator Manufacturer, shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JVCompany.

AND WHEREAS clause 1.7.3 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable), the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS, *Subsidiary Company of Indian Manufacturing Company as per note 8 of clause 1.0.0 and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venturecompany.

*AND WHEREAS clause 1.7.4 item 4.0 of BDS of Bidding Documents, stipulate that the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.7.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the saidContract(s).
2. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer, the *technology provider (if any), the Indian Manufacturing Company and *Subsidiary Company of Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under thisTender.
3. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company as part of the technology transferagreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally responsible for the successful performance of all the contractual obligations under the saidContracts.
- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JVCompany, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating &

pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).

5. That in consideration of the award of the Contract by the Employer to the Contractor, we the *Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).
6. In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:
 - a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
 - b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory,

reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.

- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumpingsystem:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with theContracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in theContracts.

- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer'sapproval/acceptance.

- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the

equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

8. Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non-performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Qualified Steam Turbine Generator Manufacturer, *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and Contractor.
9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
 - a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries **(defined at Annexure-I)** so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
 - b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/ supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
 - d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
 - e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
 - f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
10. The Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety(90) days beyond the completion of the Phased Manufacturing Program under the

Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Indian Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).

12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER,

*Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/CONTRACTOR)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(the Qualified Steam Turbine Generator
Manufacturer/ Holding Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s.....
(Indian Manufacturing Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

3.WITNESS:

*ForM/s.....

(Subsidiary Company of Indian Manufacturing Company)

.....
(Signature, Name &
Address)

.....
(Signature of the Authorised
Representative)
.....
Name.....
Designation.....
Common Seal of the Company

WITNESS:

For M/s.....
(OTHER PROMOTER)

.....
.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS:

For M/s.....
(*Qualified Generator
Manufacturer)

.....
.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Note:

- 1** *Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.*
- 2** **Bidder to strike out, whichever is not applicable.*

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system

**FORM OF DEED OF JOINT UNDERTAKING
FOR STEAM TURBINE GENERATOR AND AUXILIARIES
AS PER CLAUSE 1.7.3 & *1.7.4 AND NOTE NO. *4 & 8 OF CLAUSE 1.0.0, ITEM 4.0 OF BID DATA
SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER / CONTRACTOR, THE QUALIFIED STEAM TURBINE GENERATOR MANUFACTURER (HOLDING COMPANY ALONG WITH ITS SUBSIDIARIES), THE INDIAN SUBSIDIARY/JOINT VENTURE COMPANY CREATED FOR MANUFACTURING OF SUPERCRITICAL STEAM TURBINE GENERATOR IN INDIA, *SUBSIDIARY COMPANY OF ABOVE INDIAN SUBSIDIARY/ *JOINT VENTURE COMPANY FOR MANUFACTURING SUPER CRITICAL STEAM TURBINE GENERATOR IN INDIA AS PER NOTE NO. 8 FOR CL 1.0.0 AND THE OTHER PROMOTOR HAVING 25% OR HIGHER EQUITY PARTICIPATION IN THE SUBSIDIARY COMPANY/JV COMPANY AND *THE QUALIFIED GENERATOR MANUFACTURER FOR SUCCESSFUL PERFORMANCE OF THE STEAM TURBINE GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "the Qualified Steam Turbine Generator Manufacturer/Holding Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company incorporated under having its Registered Office at M/s a Company incorporated under having its Registered Office at and M/s a Company incorporated under having its Registered Office at (Subsidiary(ies) of the Qualified Steam Turbine Generator Manufacturer who are lending strength/ experience to the Qualified Steam Turbine Generator Manufacturer for meeting the requirements stipulated in clause 1.1.1(B) item 4.0 of BDS and hereinafter collectively called the "Subsidiary(ies)", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company registered in India under the Indian Companies Act having its Registered Office at created for manufacturing of supercritical Steam Turbine Generator in India (hereinafter called the Indian Joint Venture Company or Indian Subsidiary Company or Indian Manufacturing Company, which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under registered for manufacturing of Supercritical Steam Turbine Generator in India, having its Registered Office at (hereinafter called the "Subsidiary Company of Indian Manufacturing Company", which expression shall include its successors, administrators, executors and permitted assigns) and

M/s a Company, other than the Qualified Steam Turbine Generator Manufacturer, registered under having its Registered Office at and having 25% or higher equity participation in the Indian Subsidiary Company/JV Company (hereinafter called the

"OTHER PROMOTER", which expression shall include its successors, administrators, executors and permitted assigns) and

*M/s....., a Company incorporated under having its Registered Office at..... (hereinafter called the "Qualified Generator Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns),

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. :**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**

AND WHEREAS Clause 1.7.2 (ii), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder who meets the requirements stipulated in clause 1.7.1, item 4.0 of BDS shall associate with **EITHER** *i) the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable) alongwith requirements of clause 1.1.2 (a)/1.1.2 (b), **OR** *ii) Indian Subsidiary/JV Company of Qualified Steam Turbine Generator Manufacturer, meeting the requirements stipulated at 1.3.1 (a) in conjunction with 1.3.3/1.4.1 (a) in conjunction with 1.4.3 (as the case may be), alongwith requirements stipulated at clause 3.0.0 and shall source the Steam Turbine Generator and auxiliaries from such qualified associate. Further as per note 4 ii) of clause 1.0.0, Item 4.0 of BDS, the Holding Company and all such subsidiaries lending strength / experience to the Holding Company shall necessarily be part of the DJU being submitted by the Bidder. Further as per note 8 of clause 1.0.0, Item 4.0 of BDS, the manufacturing may, alternatively, be carried out by another subsidiary registered for manufacturing supercritical turbine generator in India of the above Indian subsidiary / JVCompany.

AND WHEREAS clause 1.7.3 item 4.0 of BDS of Bidding Documents, stipulate that the bidder, shall furnish a deed of joint undertaking executed by him, the Qualified Steam Turbine Generator Manufacturer meeting the requirements of Clause 1.1.1 (B) in conjunction with 1.1.4 (as applicable), Subsidiary(ies), the Subsidiary Company/Joint Venture Company meeting the requirements specified in Clause 1.1.2 (a)/1.1.2 (b), Item 4.0 of BDS, *Subsidiary Company of Indian Manufacturing Company as per note 8 of clause 1.0.0 and OTHER PROMOTER having a 25% or higher equity participation in the Subsidiary company/ Joint Venturecompany.

*AND WHEREAS clause 1.7.4 item 4.0 of BDS of Bidding Documents, stipulate that the Qualified Steam Turbine Generator Manufacturer who meets the requirement of Clause 1.1.1 (B) of item 4.0 of BDS (except for Generator), the Subsidiary Company / Joint Venture Company shall associate and have a technology transfer agreement with a Qualified Generator Manufacturer who meets the requirement of Clause 1.1.1(B) fully in respect of Generator and Qualified Generator Manufacturer shall necessarily be one of the executants of Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Document No.**DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company and OTHERPROMOTERarerequiredtojointlyexecuteandfurnishalongwiththebidanirrevocable

Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, fully meeting the stipulated technical requirements, and guaranteed parameters and characteristics as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

*AND WHEREAS the Qualified Generator Manufacturer who meets the requirement of item no. 1.7.4 of item 4.0 BDS shall also be required to be one of the executants of the above Deed of Joint Undertaking and be liable to the Employer for successful performance of the Generator & its auxiliaries.

AND WHEREAS the Bidder, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful implementation of the Phased Manufacturing Program and transfer of technology for supercritical Steam Turbine Generator sets in accordance with the bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful implementation of the Phased Manufacturing Program as specified in the said Contract(s).
2. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the *Qualified Generator Manufacturer do jointly hereby undertake, declare and confirm that we shall be fully responsible for ensuring a valid technology transfer agreement including license to manufacture and supply in India between the *Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Qualified Generator Manufacturer, the *technology provider (if any), the Indian Manufacturing Company and *Subsidiary Company of Indian Manufacturing Company covering the type, size and rating of the Steam Turbine Generator sets specified, valid minimum up to the end of the defect liability period of the contract. The technology transfer agreement necessarily covers transfer of technological know-how for super critical Steam Turbine Generator in the form of complete transfer of design dossier, design software's, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian Manufacturing Company. Further technology transfer agreement have provision that the transfer of technology to the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company shall be complete by the time last 800 MW supercritical unit is supplied by the Contractor under this Tender.
3. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the *Qualified Generator Manufacturer, do further undertake, declare and confirm that we shall be fully responsible for imparting relevant training to the personnel of the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company as part of the technology transfer agreement.
4. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Contractor, the Subsidiary Company/JV Company, *Subsidiary Company of Indian

Manufacturing Company, and OTHER PROMOTER do hereby further declare and undertake that we shall be jointly and severally responsible for the successful performance of all the contractual obligations under the said Contracts.

- 4.1 That in consideration of the award of the Contract by the Employer to the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system, as specified under the said contract to the satisfaction of Employer (Defined at **Annexure-I**).
5. That in consideration of the award of the Contract by the Employer to the Contractor, we the *Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies) and the Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the execution and successful performance of Generator and its auxiliary equipments (**defined at Annexure-I**).
6. In case of any breach of the Contract committed by the Contractor, we the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **contract for the scope related to** Steam Turbine Generator and Auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Contractor's obligations and responsibilities stipulated under the Contracts. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to any of the Steam Turbine Generator Sets & their auxiliaries including turbine cycle, regenerative feed heating & pumping system for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, we, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, and the *Qualified Generator Manufacturer and the Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/ damages shall be in line with provisions on Limitation of Liability of the said contract(s).

The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company and OTHER PROMOTER shall be limited to an amount equivalent to **US\$ 87 Million** for each Turbine Generator Set to be supplied by the Bidder / Contractor. *The liability of the Qualified Generator Manufacturer, hereunder shall, however be limited to an amount equivalent to **US\$ 13 Million** for each Generator Set to be supplied by the Bidder / Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

7. Without prejudice to the generally of the undertaking in above paragraphs, the manner of achieving the objectives set forth above shall be as follows:

- a) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for design, engineering, supply, erection, performance including all guarantees for all the supercritical steam turbine generator sets & their auxiliaries.
- b) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for engineering preparation of all design, design calculations and manufacturing drawings for all the Steam Turbine Generator Sets & their auxiliaries and Condensers including Interfacing and integrating the complete turbine cycle including Boiler Feed Pump, Condensate Extraction Pump, Heaters, Deaerators, etc. so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generators Sets and their Auxiliaries, Condensers as well as thermal performance of turbine cycle as per guaranteed parameters specified in the Contract.
- c) We, the Qualified Steam Turbine Generator Manufacturer, shall be fully responsible for calculation of Heat Balance Diagrams, integration of all turbine cycle equipments, regenerative feed heating & pumping system:

Further, we, the Qualified Steam Turbine Generator Manufacturer, shall extend our quality surveillance/ supervision/quality control to the Indian Manufacturing Company / Contractor during manufacture, erection, commissioning and performance testing, both at works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Qualified Steam Turbine Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system, the Qualified Steam Turbine Generator Manufacturer shall depute its technical experts from time to time in the works/Employer's project site, as mutually agreed upon between the Employer and the Contractor in accordance with the Contracts.

- d) We, the Qualified Steam Turbine Generator Manufacturer, will supply equipment/components manufactured at our works or at our vendor's works as per requirements/schedule specified in the Contracts.
- e) We, the Qualified Steam Turbine Generator Manufacturer, will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system. For the items to be manufactured as per the Qualified Steam Turbine Generator Manufacturer's design, the Qualified Steam Turbine Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Indian subsidiary/Joint Venture Company, which would result in the same quality of equipment as if manufactured at the Qualified Steam Turbine Generator Manufacturer's works and shall meet Qualified Steam Turbine Generator Manufacturer's approval/acceptance.
- f) The Qualified Steam Turbine Generator Manufacturer shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its Indian subsidiary's/Joint Venture Company's works as per the Qualified Steam Turbine Generator Manufacturer's design and quality acceptance level (to be finalized during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Steam Turbine Generator Sets & their auxiliaries and Condensers heaters, deaerators, BFP, CEP, HP/LP bypass system as per the Contract in accordance with the Qualified Steam Turbine Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the

design/drawings/procedure in certain areas, the Contractor shall seek specific approval of Qualified Steam Turbine Generator Manufacturer before proceeding further.

- g) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor fails to demonstrate during the Guarantee tests that Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system meet the guarantee parameters and demonstration parameters and demonstration parameters as specified in the Contract, including the thermal performance of turbine cycle, the Qualified Steam Turbine Generator Manufacturer shall promptly provide all technical assistance/services/ support to analyse and suggest corrective measures/modifications to the equipment/systems of all the Steam Turbine Generator Sets & their auxiliaries and Condensers, heaters, deaerators, BFP, CEP, HP/LP bypass system directly to the Employer and the Contractor & the Qualified Steam Turbine Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Steam Turbine Generator Manufacturer and agreed by the Employer) for each of their own expense. Thereafter, the Contractor and the Qualified Steam Turbine Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.
8. Without prejudice to the joint and several obligations of the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and the *Qualified Generator Manufacturer hereunder, the analysis/investigations of the non- performance of the equipment manufactured by the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company may initially be carried out by the Contractor, within a period of 15 days from the date of reference of the problem by the Employer before the Employer approaches the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, *Qualified Generator Manufacturer for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), *Qualified Generator Manufacturer (with respect to obligations and responsibilities of the Qualified Generator Manufacturer covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Qualified Generator Manufacturer, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and Contractor.
 9. * Without prejudice to the generality of the undertaking in above paragraphs, the responsibilities of Qualified Generator Manufacturer shall be as follows:
 - a) We, the Qualified Generator Manufacturer, shall be fully responsible for engineering, preparation of all design, design calculations and manufacturing drawings for all the Generators and their auxiliaries (**defined at Annexure-I**) so as to ensure satisfactory, reliable and trouble free performance of Steam Turbine Generator Sets and their auxiliaries as per guaranteed parameters specified in the Contract.
 - b) We, the Qualified Generator Manufacturer shall provide all additional necessary technical assistance to the Contractor for the portion of work pertaining to Generators

and their auxiliaries. This shall also include providing all design data required by the Contractor for proper integration and interfacing of Steam Turbine and Generator.

Further, we, the Qualified Generator Manufacturer shall extend our quality surveillance/supervision/quality control to the Contractor during manufacture, erection, commissioning and performance testing of all Generators and their auxiliaries, both at Contractor's works and/or at Employer's project site. Without prejudice to the overall responsibilities of the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company and *Qualified Generator Manufacturer as to the successful commissioning and the performance of the Steam Turbine Generator Sets and their auxiliaries, the Qualified Generator Manufacturer shall depute its technical experts from time to time to the Contractor's works/ Employer's project site for jobs pertaining to Generators and their auxiliaries, as mutually agreed upon between the Employer and the Contractor in accordance with the stipulations of the Contracts.

- c) We, the Qualified Generator Manufacturer will supply equipment/components manufactured at our works or at our vendor's works as per requirements/ schedule specified in the Contracts.
- d) We, the Qualified Generator Manufacturer will be fully responsible for the quality of manufacture of all equipment/main assembly/components for incorporation in all the Generators & their auxiliaries. For the items to be manufactured by the Contractor at his or his vendor's works as per the Qualified Generator Manufacturer's design, the Qualified Generator Manufacturer shall ensure completeness and correctness of the design, data, document and information in every detail provided to the Contractor which would result in the same quality of equipment as if manufactured at Qualified Generator Manufacturer's works and shall meet Qualified Generator Manufacturer's approval/acceptance.
- e) The Contractor shall be responsible to manufacture portion of the equipment which are to be manufactured at its works or its vendor's works as per the Qualified Generator Manufacturer's design and to the Qualified Generator Manufacturer's quality acceptance level (to be finalised during award of Contract). Further, the Contractor shall erect, commission and carry out the performance tests of all the Generators and their auxiliaries as per the Contract in accordance with the Qualified Generator Manufacturer's advice, procedure and guidance. In case there is any need to modify the design/ drawings/ procedure in certain areas, the Contractor shall seek specific approval of Qualified Generator Manufacturer before proceeding further.
- f) In the event any problem is encountered during design, manufacture, shop testing, erection, testing and commissioning of Generators and their auxiliaries or if the Contractor fails to demonstrate during the performance tests that the Generators and its auxiliaries meet the guaranteed parameters and demonstration parameters as specified in the Contract, the Qualified Generator Manufacturer shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipment/ systems of all the Generators & their auxiliaries directly to the Employer and the Contractor & the Qualified Generator Manufacturer shall promptly carry out all corrective measures and modifications (as suggested by the Qualified Generator Manufacturer and agreed by the Employer) for each of their respective equipment/systems supplied by them at their own expense. Thereafter, the Contractor and the Qualified Generator Manufacturer shall demonstrate the successful performance meeting the guaranteed parameters and demonstration parameters.

10. The Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/ JV Company, *Subsidiary Company of Indian Manufacturing Company and the *Qualified Generator Manufacturer will be fully responsible for the quality of all the equipments/ main assemblies/ components manufactured at their works or at their Vendors works or constructed at site, and their repair or replacement, if necessary, for incorporation in the plant and timely delivery thereof to meet the Completion Schedule under the Contracts.
11. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Manufacturing Company, *Subsidiary Company of Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer, do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days beyond the scheduled end of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. We, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Indian Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER and *Qualified Generator Manufacturer do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
12. In case of award, in addition to the Contract Performance Securities to be furnished by the bidder/Contractor, the on demand Bank Guarantees in favour of the Employer as specified in Qualifying Requirements stipulated at Item 4.0 of BDS shall be furnished.

The aforesaid Bank Guarantees shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled date of completion of defect liability period of all the equipment/ component covered under the Contract(s) for EPC Package in respect of the project awarded to the Bidder/ Contractor or ninety (90) days beyond the scheduled completion of the Phased Manufacturing Program under the Contract(s), whichever occurs later. In case of delay in completion of the defect liability period under the Contract(s) or delay in completion of the Phased Manufacturing Program beyond the aforesaid period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of the project under the contract or completion of Phased Manufacturing Programme, whichever occurs later. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
13. Any dispute that may arise between the Employer and the Contractor or the Indian Manufacturing Company or *Subsidiary Company of Indian Manufacturing Company or the OTHER PROMOTER in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and *the Qualified Steam Turbine Generator Manufacturer or *the Qualified Generator Manufacturer or Subsidiary(ies) in

connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

14. We, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, OTHER PROMOTER, *Qualified Generator Manufacturer and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
15. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Contractor, the Qualified Steam Turbine Generator Manufacturer, Subsidiary(ies), the Subsidiary Company/JV Company, *Subsidiary Company of Indian Manufacturing Company, the OTHER PROMOTER and the *Qualified Generator Manufacturer through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(BIDDER/CONTRACTOR)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company

For M/s.....
(the Qualified Steam Turbine Generator
Manufacturer/ Holding Company)

WITNESS :

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

For M/s
(SUBSIDIARY 1 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 2 OF HOLDING COMPANY)

WITNESS :

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(SUBSIDIARY 3 OF HOLDING COMPANY)

WITNESS:

1.....

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(Indian Manufacturing Company)

WITNESS:

1.....

.....
(OfficialAddress)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

3.WITNESS:

*ForM/s.....
(Subsidiary Company of Indian Manufacturing
Company)

.....

.....
(Signature oftheAuthorised

(Signature, Name &
Address)

Representative)

.....
Name.....
Designation.....
Common Seal of the Company

WITNESS:

.....

.....
(Official Address)

For M/s.....
(OTHER PROMOTER)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

WITNESS:

.....

.....
(Official Address)

For M/s.....
(*Qualified Generator
Manufacturer)

.....
(Signature of the Authorised
Representative)
Name.....
Designation.....
Common Seal of the
Company.....

Note:

- 1 Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by bidder and to be attached along with the signed Deed of Joint Undertaking.**
- 2 *Bidder to strike out, whichever is not applicable.**

Indicative list of equipment / systems

A) Turbine

1. Turbine and its auxiliaries i.e. control fluid system, gland steam sealing system, governing system, lube oil system, exhaust hood spray system, stop /control valves, turbine drain system, turbine protection system, turbine control system (Analog & sequence) and turbine supervisory instruments.
2. Generator and auxiliaries i.e. generator seal oil system, generator water cooling system, hydrogen, carbon dioxide & nitrogen system, generator excitation system.
3. Condensate, feed water and extraction system.
4. Control and instrumentation.
5. Condenser and condenser air evacuation system.
6. CEPs & BFPs.
7. LPHs, HPHs and Deaerator.
8. HPLP bypass system.
9. Integration of turbine cycle equipment.
10. Any other auxiliary of steam turbine generator set not covered above.

B) Generator

1. Generator Seal oil system
2. Generator water cooling system
3. Hydrogen, carbon dioxide & Nitrogen system

**FORM OF DEED OF JOINT UNDERTAKING FOR THE STEAM GENERATOR AND AUXILIARIES
AS PER NOTE 5 TO CLAUSE 1.0.0, ITEM 4.0 OF BID DATA SHEETS**

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER, SUPERCRITICAL STEAM GENERATOR MANUFACTURER MEETING THE REQUIREMENT OF CLAUSE 1.1.1(A), ITEM 4.0 OF BID DATA SHEETS PARTIALLY AND INTENDING TO QUALIFY AS PER NOTE (5) TO CLAUSE NO.1.0.0, ITEM 4.0 OF BID DATA SHEETS AND THE VARIABLE PRESSURE DESIGN TECHNOLOGY OWNER (LICENSOR) MEETING THE REQUIREMENT OF NOTE (5) TO CLAUSE NO.1.0.0, ITEM 4.0 OF BID DATA SHEETS FOR SUCCESSFUL PERFORMANCE OF STEAM GENERATOR AND AUXILIARIES

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company incorporated under having its Registered Office at (hereinafter called the Bidder/ Contractor, which expression shall include its successors, administrators, executors and permitted assigns), and

M/s a Company incorporated under having its Registered Office at (hereinafter called the Supercritical Steam Generator Manufacturer, which expression shall include its successors, administrators, executors and permitted assigns), and

M/s a Company incorporated under having its Registered Office at (hereinafter called the "Technology Owner"/ "Licensor", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS Note (5) to Clause 1.0.0, Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the Bidder and the Supercritical Steam Generator Manufacturer who meets the requirements stipulated in clause 1.1.1(A), item 4.0 of Bid Data Sheet partially shall associate with the Licensor who satisfies the qualification requirements specified in Note (5) to Clause 1.0.0, Item 4.0 of BDS and furnish a Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**.

AND WHEREAS M/s (Supercritical Steam Generator Manufacturer) meets the requirement of clause 1.1.1(A), item no. 4.0 of BDS except that the evaporator in the reference steam generator is not designed for variable pressure operation and is designed for constant pressure (Universal Pressure) operation only, and desires to associate with M/s (Licensor) who is the original technology owner and with whom the Supercritical Steam Generator Manufacturer has an ongoing license agreement (which covers technology transfer) for design, manufacture, sell, use, service of once through variable pressure supercritical steam generator technology (with evaporator

suitable for variable pressure operation in sub-critical and supercritical pressure ranges) and who satisfies the qualification requirements as specified in Note (5) to Clause 1.0.0, Item 4.0 of BDS.

AND WHEREAS the Bidder, the Supercritical Steam Generator Manufacturer and the Technology Owner are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer for the successful performance of the Steam Generators, alongwith an extended warranty of atleast one (01) year over and above what is required as per bidding documents, fully meeting the stipulated technical requirements, and Guaranteed parameters as per bidding documents, in the event, the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract(s) by the Employer to the Contractor, we the Contractor, Technology Owner and the Supercritical Steam Generator Manufacturer do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of complete Steam Generators, alongwith an extended warranty of atleast one (01) year over and above what is required as per bidding documents, including its satisfactory thermal performance of all the units, as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract(s) committed by the Contractor and the Supercritical Steam Generator Manufacturer, we the Technology Owner do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of complete Steam Generator, including its satisfactory thermal performance and achievement of guaranteed parameters, of all the units and undertake to carry out all obligations and responsibilities under this Deed of Joint Undertaking.
- 2.1 The aggregate liability of the Bidder/Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, provided that this limitation shall not apply to any obligation of the Contractor to indemnify the Employer with respect to patent infringement as per provisions of bidding documents (Clause 30 of GCC and relevant clause of SCC).

The liability of the Technology Owner hereunder shall, however, be limited to an amount calculated @ **US\$ 35 Million** for each Steam Generator to be supplied by the Bidder/ Contractor. This is without prejudice to any right of Employer against the Contractor under the Contract and all guarantees.

Without prejudice to the joint and several obligations of the Contractor, Supercritical Steam Generator Manufacturer and the Qualified Steam Generator Manufacturer hereunder, the analysis/ investigations of the non-performance of the equipment manufactured by the Contractor may initially be carried out by the Supercritical Steam Generator Manufacturer within a period of 15 days from the date of reference of the problem by the Employer, before the Employer approaches the Technology Owner for any such analysis/ investigation. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor or the Supercritical Steam Generator Manufacturer before proceeding against the Technology Owner (with respect to obligations and responsibilities of the Technology Owner covered under this Deed of Joint Undertaking), nor any extension of time or any relaxation given by the Employer to the contractor shall prejudice any right of Employer under this Deed of Joint Undertaking to proceed against the Technology Owner, Supercritical Steam Generator Manufacturer and the Contractor.

3. Without prejudice to the generality of the undertaking in para '1' above, the manner of achieving the objectives set forth in para '1' above shall be as follows :
- a) We, the Technology Owner shall be fully responsible for design and engineering of once through thermo dynamic and thermo hydraulic design, furnace, boiler heating surface, start up system so as to ensure satisfactory, reliable, safe and trouble free performance of all Steam Generators.
 - b) We, the Technology Owner shall be specifically responsible for the following:
 - (i) Thermal and hydraulic design of Steam Generators.
 - (ii) Evaporator design including flow distribution, temperature
 - (iii) Metal temperatures and stresses, static stability and dynamic stability
 - (iv) Providing all design data required by the Contractor to carry out design of steam water separator for their proper interfacing and integration.
 - (v) Complete water wall system design, its supporting system and buckstay design
 - (vi) Complete design of start up drain and circulation system
 - c) In the event any problem is encountered during design, manufacture, erection, testing and commissioning or if the Contractor and the Supercritical Steam Generator Manufacturer fails to demonstrate during the guarantee tests that the Steam Generators meet the guaranteed parameters and demonstration parameters as specified in the Contract, including thermal performance of Steam Generators, the Technology Owner shall promptly provide all technical assistance/ services/ support to analyse and suggest corrective measures/ modifications to the equipments/ systems of all the Steam Generators under all the Contracts directly to the Employer, the Supercritical Steam Generator Manufacturer and the Contractor, and Technology Owner shall promptly carry out all corrective measures and modifications (as suggested by the Technology Owner and agreed by the Employer) for each of their respective equipment / systems supplied by them at their own expense. Thereafter, the Contractor, Supercritical Steam Generator Manufacturer and the Technology Owner shall demonstrate the successful performance of the Steam Generators meeting the guaranteed parameters and demonstration parameters.
4. We, the Contractor, the Supercritical Steam Generator Manufacturer and the Technology Owner do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till one (1) year beyond the scheduled date of completion of the defect liability period of the all the equipment/ component covered under the Contract(s) for **EPC PACKAGE for KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor. In case of delay in completion of the defect liability period under the Contract(s) beyond the aforesaid period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 36 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. We, the Contractor, the Supercritical Steam Generator Manufacturer and the Technology Owner do further undertake and confirm that this Deed of Joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract(s).
5. In case of award, in addition to the Contract Performance Securities to be furnished by the Contractor, the Technology Owner shall furnish as security on demand Performance Bank Guarantee(s) in favour of the Employer as per provisions of the bidding documents. The value of each such Bank Guarantee shall be equal to **INR 13 Millions (Indian Rupees Thirteen Million)** and it shall be guarantee towards the faithful performance/ compliance of this

Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The bank guarantee shall be unconditional, irrevocable and initially valid till one (1) year beyond the scheduled date of Completion of defect liability period of all the equipment/ component under the Contract(s) for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** awarded to the Bidder/ Contractor. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this bank guarantee shall terminate at the latest 39 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

6. Any dispute that may arise between the Employer and the Contractor in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Qualified Steam Generator Manufacturer or the Technology Owner in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

7. That this Deed of joint undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Bidder/ Contractor, the Supercritical Steam Generator Manufacturer and the Licensor / Technology Owner through their authorised representatives, have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

For M/s
(Bidder/ Contractor)

WITNESS :

1.

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s
(Supercritical Steam Generator Manufacturer)

WITNESS :

1.

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name.....

Designation.....
Common Seal of the
Company

For M/s.....
(Licensor/ Technology Owner)

WITNESS :

1.

.....
(Official Address)

.....
(Signature of the Authorised
Representative)
Name
Designation.....
Common Seal of the
Company.....

Note: Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

FORM OF DEED OF JOINT UNDERTAKING FOR ENGINEERING WORK

AS PER CLAUSE 5.1.0 (b), ITEM 4.0 OF BID DATA SHEETS

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER AND ASSOCIATE [ARCHITECT ENGINEERING FIRM WHO MEETS THE REQUIREMENT OF CLAUSE 5.1.0 (a) (i) , ITEM 4.0 OF BID DATA SHEETS] FOR SUCCESSFUL PERFORMANCE OF ALL THE ENGINEERING ACTIVITIES IN THE SCOPE OF WORK OF ARCHITECT ENGINEERING FIRM FOR EPC PACKAGE FOR KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company registered under the having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Associate", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS Clause 5.1.0 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder, who does not meet the requirements indicated at Clause 5.1.0 (a) (i) but meets the requirement indicated at 5.1.0 (a)(ii), Item 4.0 of Bid Data Sheets (BDS), shall associate with a Architect Engineering Firm and the Bidder shall get the Engineering documents related to Thermal cycle, Power Cycle piping and Flash Tanks/Flash Boxes, steam Generator start up system, Sizing of EPC Equipments, interface between SG and TG, Unit Start up and Control philosophy vetted by an Architect Engineering Firm who meets the requirements stipulated at Clause 5.1.0 (a) (i) , Item 4.0 of Bid Data Sheets (BDS)., and furnish a Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder and the Associate (who is an Architect Engineering firm meeting the requirements specified in Clause No. 5.1.0 (a) (i) of Item 4.0 of Bid Data Sheet), are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer to perform successfully all the engineering activities included in the scope of Architect Engineering Firm (viz. vetting of Engineering documents related to Thermal cycle, Power Cycle piping and Flash Tanks/Flash Boxes, steam Generator start up system, Sizing of EPC Equipments, interface between SG and TG, Unit Start up and Control philosophy) of EPC package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**, specified in the

Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**, in the event the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Associate and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of all the engineering activities included in the scope of Architect Engineering Firm (viz. vetting of Engineering documents related to Thermal cycle, Power Cycle piping and Flash Tanks/Flash Boxes, steam Generator start up system, Sizing of EPC Equipments, interface between SG and TG, Unit Start up and Control philosophy) of the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)** as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract committed by the Contractor, we, the Associate, do hereby undertake, declare and confirm that we shall be fully responsible for successful performance of all the engineering activities included in the scope of Architect Engineering Firm (viz. vetting of Engineering documents related to Thermal cycle, Power Cycle piping and Flash Tanks/Flash Boxes, steam Generator start up system, Sizing of EPC Equipments, interface between SG and TG, Unit Start up and Control philosophy) and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to engineering activities included in the scope of the Associate, we, the Associate and Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/damages shall be in line with provision on Limitation of Liability of the said contract. However, the financial liability of the Associate shall be limited to the value of sub-contract between the Contractor and the Associate. This is without prejudice to any rights of the Employer against the Contractor under the Contract and all guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Associate (with respect to obligations and responsibilities covered under this Deed of joint undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Associate and Contractor.
3. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objectives set-forth in paragraph 1 above shall be as follows:
 - a. The Associate will be fully responsible for entire engineering activities covered under the scope of Associate from basic engineering till successful demonstration of performance guarantees, as specified in the Contract to the satisfaction of the Employer..

Further, the Associate shall depute their technical experts from time to time to the Contractor's works/ Employer's office/project site as required by the Employer and agreed to by the Contractor and Associate to facilitate the successful performance of all equipment covered under the scope as stipulated in the Contract.
 - b. In the event the Associate and the Contractor fail to demonstrate that the equipment covered under the Contract meets the guaranteed parameters and demonstration parameters as specified in the Contract, the Associate and the Contractor shall promptly carry out all the corrective measures related to engineering activities at their own expense and shall promptly provide corrected design to the Employer.

- c. Entire engineering activities pertaining to implementation of the corrected design and necessary repairs, replacements, rectification or modifications to the equipment covered under the scope shall be the joint and several responsibility of the Contractor and Associate.
4. We, the Contractor and the Associate do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days after the scheduled end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. We, the Contractor and the Associate, do further undertake and confirm that this Deed of joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract.
5. The Contractor and Associate will be fully responsible for the quality of entire engineering activities covered under the package specification, from basic engineering till successful demonstration of performance guarantees of all equipment covered under the contract.
6. In case of award, in addition to the Contract Performance Security furnished by the Contractor, the Associate shall furnish as security an on demand Performance Bank Guarantee in favour of the Employer as per provisions of the bidding documents. The value of such Bank Guarantee shall be **INR 1.5 Million (Indian Rupees One and Half Million)** and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The Bank Guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
7. Any dispute that may arise between the Employer and the Contractor in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Associate in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

8. We, the Associate and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.

9. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Associate and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.

.....
(Official Address)

For M/s.
(Associate)

.....
(Signature of the Authorised Representative)

Name

Designation

Common Seal of the
Company.....

WITNESS :

1.

.....
(Official Address)

For M/s
(Bidder/Contractor)

.....
(Signature of the Authorised Representative)

Name

Designation

Common Seal of the
Company.....

Note: Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

FORM OF DEED OF JOINT UNDERTAKING FOR ENGINEERING WORK

AS PER CLAUSE 5.3.0 (a), ITEM 4.0 OF BID DATA SHEETS

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER AND ASSOCIATE [ARCHITECT ENGINEERING FIRM WHO MEETS THE REQUIREMENT OF CLAUSE 5.1.0 (a) (i) & (ii), ITEM 4.0 OF BID DATA SHEETS] FOR SUCCESSFUL PERFORMANCE OF ALL THE ENGINEERING ACTIVITIES IN THE SCOPE OF WORK OF ARCHITECT ENGINEERING FIRM FOR EPC PACKAGE FOR KODERMA THERMAL POWER STATION PHASE-II (2x800MW)

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company registered under the having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Associate", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS Clause 5.3.0 (a), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder, who does not meet the requirements indicated at Clause 5.1.0 (a) (i) & (ii) or Clause 5.2.0 (a) (i) & (ii), Item 4.0 of Bid Data Sheets (BDS), shall associate with a Architect Engineering Firm who meets the requirements stipulated at Clause 5.1.0 (a) (i) & (ii), Item 4.0 of Bid Data Sheets (BDS) to carry-out complete engineering of the EPC Package and furnish a Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder and the Associate (who is an Architect Engineering firm) meeting the requirements specified in Clause No. 5.1.0 (a) (i) and (ii) of Item 4.0 of Bid Data Sheet, are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer to perform successfully all the engineering activities included in the scope of work for EPC package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)**, specified in the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**, in the event the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Associate and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of all the engineering activities included in the scope of work of the EPC Package for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)** as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract committed by the Contractor, we, the Associate, do hereby undertake, declare and confirm that we shall be fully responsible for successful performance of all the engineering activities included in the scope of the Contract and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to engineering activities included in the scope of the Contract, we, the Associate and Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/damages shall be in line with provision on Limitation of Liability of the said contract. However, the financial liability of the Associate shall be limited to the value of sub-contract between the Contractor and the Associate. This is without prejudice to any rights of the Employer against the Contractor under the Contract and all guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Associate (with respect to obligations and responsibilities covered under this Deed of joint undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Associate and Contractor.
3. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objectives set-forth in paragraph 1 above shall be as follows:
 - a. The Associate will be fully responsible for entire engineering activities covered under the package from basic engineering till successful demonstration of performance guarantees, as specified in the Contract to the satisfaction of the Employer. This shall also include (a) Basic engineering for integration and interface between SG & TG. (b) Pre award engineering for system associated with BTG & BOP, (c) Post Award engineering covering review of thermal cycle of power plant, review and interface Engineering for over all integration of various power plant equipment / packages including review of major design documentation such as design / sizing calculations, layout, plant start-up & control philosophy, schematic drawings and other documentation related to Mechanical, Civil, Electrical and C&I design.

Further, the Associate shall depute their technical experts from time to time to the Contractor's works/ Employer's office/project site as required by the Employer and agreed to by the Contractor and Associate to facilitate the successful performance of all equipment covered under the package as stipulated in the Contract.

- b. In the event the Associate and the Contractor fail to demonstrate that the equipment covered under the Contract meets the guaranteed parameters and demonstration parameters as specified in the Contract, the Associate and the Contractor shall promptly carry out all the corrective measures related to engineering activities at their own expense and shall promptly provide corrected design to the Employer.

- c. Entire engineering activities pertaining to implementation of the corrected design and necessary repairs, replacements, rectification or modifications to the equipment covered under the package shall be the joint and several responsibility of the Contractor and Associate.
4. We, the Contractor and the Associate do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days after the scheduled end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. We, the Contractor and the Associate, do further undertake and confirm that this Deed of joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract.
5. The Contractor and Associate will be fully responsible for the quality of entire engineering activities covered under the package specification, from basic engineering till successful demonstration of performance guarantees of all equipment covered under the contract.
6. In case of award, in addition to the Contract Performance Security furnished by the Contractor, the Associate shall furnish as security an on demand Performance Bank Guarantee in favour of the Employer as per provisions of the bidding documents. The value of such Bank Guarantee shall be **INR 1.5 Million (Indian Rupees One and Half Million)** and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The Bank Guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
7. Any dispute that may arise between the Employer and the Contractor in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Associate in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

8. We, the Associate and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
9. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Associate and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.
.....
(Official Address)

For M/s.
(Associate)

.....
(Signature of the Authorised Representative)

Name

Designation

Common Seal of the Company.....

WITNESS :

1.
.....
(Official Address)

For M/s
(Bidder/Contractor)

.....
(Signature of the Authorised Representative)

Name

Designation

Common Seal of the Company.....

Note: Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

FORM OF DEED OF JOINT UNDERTAKING FOR ENGINEERING WORK

AS PER CLAUSE 5.3.0 (b), ITEM 4.0 OF BID DATA SHEETS

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER AND ASSOCIATE [ARCHITECT ENGINEERING FIRM WHO MEETS THE REQUIREMENT OF CLAUSE 5.1.0 (a) (i) , ITEM 4.0 OF BID DATA SHEETS] FOR SUCCESSFUL PERFORMANCE OF ALL THE ENGINEERING ACTIVITIES IN THE SCOPE OF WORK OF ARCHITECT ENGINEERING FIRM FOR EPC PACKAGE FOR KODERMA THERMAL POWER STATION PHASE-II (2X800MW)

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company registered under the having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Associate", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS Clause 5.3.0 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder, who does not meet the requirements indicated at Clause 5.1.0 (a) (i) & (ii) or Clause 5.2.0 (a) (i) & (ii), Item 4.0 of Bid Data Sheets (BDS), shall associate with a Architect Engineering Firm who meets the requirements stipulated at Clause 5.1.0 (a) (i) , Item 4.0 of Bid Data Sheets (BDS) to carry-out engineering Activities of Main Plant equipment / systems i.e. steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, steam Generator start up system, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes and interface between Boiler and Turbine of the EPC PACKAGE and furnish a Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder and the Associate (who is an Architect Engineering firm) meeting the requirements specified in Clause No. 5.1.0 (a) (i) of Item 4.0 of Bid Data Sheet, are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer to perform successfully all the engineering activities of Main Plant equipment / systems i.e. steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters,

steam Generator start up system, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes and interface between Boiler and Turbine of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, specified in the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**, in the event the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Associate and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of all the engineering activities of Main Plant equipment / systems i.e. steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, steam Generator start up system, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes and interface between Boiler and Turbine of the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2x800MW)** as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract committed by the Contractor, we, the Associate, do hereby undertake, declare and confirm that we shall be fully responsible for successful performance of all the engineering activities of Main Plant equipment / systems i.e. steam generator and steam turbine generator sets along with their auxiliaries including mills, fans, Air pre-heaters, steam Generator start up system, regenerative heating and pumping system, Power cycle piping and flash tanks/ flash boxes and interface between Boiler and Turbine and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to engineering activities included in the scope of the Associate, we, the Associate and Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/damages shall be in line with provision on Limitation of Liability of the said contract. However, the financial liability of the Associate shall be limited to the value of sub-contract between the Contractor and the Associate. This is without prejudice to any rights of the Employer against the Contractor under the Contract and all guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Associate (with respect to obligations and responsibilities covered under this Deed of joint undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Associate and Contractor.
3. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objectives set-forth in paragraph 1 above shall be as follows:
 - a. The Associate will be fully responsible for entire engineering activities covered under the scope of Associate from basic engineering till successful demonstration of performance guarantees, as specified in the Contract to the satisfaction of the Employer. This shall also include (a) Basic engineering for integration and interface between SG & TG. (b) Pre award engineering for system associated with BTG, (c) Post Award engineering covering review of thermal cycle of power plant, review and interface Engineering for over all integration of various power plant equipment / packages including review of major design documentation such as design / sizing calculations, layout, plant start-up & control philosophy, schematic drawings and other documentation related to Mechanical, Civil, Electrical and C&I design.

Further, the Associate shall depute their technical experts from time to time to the Contractor's works/ Employer's office/project site as required by the Employer and agreed to by the Contractor and Associate to facilitate the successful performance of all equipment covered under the scope as stipulated in the Contract.

- b. In the event the Associate and the Contractor fail to demonstrate that the equipment covered under the Contract meets the guaranteed parameters and demonstration parameters as specified in the Contract, the Associate and the Contractor shall promptly carry out all the corrective measures related to engineering activities at their own expense and shall promptly provide corrected design to the Employer.
 - c. Entire engineering activities pertaining to implementation of the corrected design and necessary repairs, replacements, rectification or modifications to the equipment covered under the scope shall be the joint and several responsibility of the Contractor and Associate.
4. We, the Contractor and the Associate do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days after the scheduled end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. We, the Contractor and the Associate, do further undertake and confirm that this Deed of joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract.
5. The Contractor and Associate will be fully responsible for the quality of entire engineering activities covered under the package specification, from basic engineering till successful demonstration of performance guarantees of all equipment for Main Plant Equipment/Systems covered under the contract including interface engineering between Boiler and Turbine.
6. In case of award, in addition to the Contract Performance Security furnished by the Contractor, the Associate shall furnish as security an on demand Performance Bank Guarantee in favour of the Employer as per provisions of the bidding documents. The value of such Bank Guarantee shall be **INR 1.5 Million (Indian Rupees One and Half Million)** and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The Bank Guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
7. Any dispute that may arise between the Employer and the Contractor in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Associate in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

8. We, the Associate and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
9. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Associate and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.

.....
(Official Address)

For M/s.
(Associate)

.....
(Signature of the Authorised Representative)

Name

Designation

Common Seal of the
Company.....

WITNESS :

For M/s
(Bidder/Contractor)

1.

.....
(Official Address)

.....
(Signature of the Authorised
Representative)

Name

Designation

Common Seal of the
Company.....

Note: Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

FORM OF DEED OF JOINT UNDERTAKING FOR ENGINEERING WORK

AS PER CLAUSE 5.3.0 (b), ITEM 4.0 OF BID DATA SHEETS

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER AND ASSOCIATE [ARCHITECT ENGINEERING FIRM WHO MEETS THE REQUIREMENT OF CLAUSE 5.1.0 (a) (ii), ITEM 4.0 OF BID DATA SHEETS] FOR SUCCESSFUL PERFORMANCE OF ALL THE ENGINEERING ACTIVITIES IN THE SCOPE OF WORK OF ARCHITECT ENGINEERING FIRM FOR EPC PACKAGE FOR KODERMA THERMAL POWER STATION PHASE-II (2X800MW)

The DEED OF JOINT UNDERTAKING executed on this day of Two thousand by M/s a Company registered under the having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Company incorporated under having its Registered Office at.....(hereinafter called the "Associate", which expression shall include its successors, administrators, executors and permitted assigns)

in favour of DVC, having its Registered Office at Damodar Valley Corporation (Established by the ACT XIV of 1948), DVC Towers, VIP Road, Kolkata- 700054, India (hereinafter called "DVC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** (hereinafter referred to as "Plant") vide its Bidding Document No.: **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS Clause 5.3.0 (b), Item 4.0 of Bid Data Sheets (BDS) of bidding documents stipulates that the bidder, who does not meet the requirements indicated at Clause 5.1.0 (a) (i) & (ii) or Clause 5.2.0 (a) (i) & (ii), Item 4.0 of Bid Data Sheets (BDS), shall associate with a Architect Engineering Firm who meets the requirements stipulated at Clause 5.1.0 (a) (ii), Item 4.0 of Bid Data Sheets (BDS) to carry-out engineering of Balance of Plant including interface between Main plant and Balance of Plant under the EPC PACKAGE and furnish a Deed of Joint Undertaking.

WHEREAS M/s (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer for EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, against the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.**

AND WHEREAS the Bidder and the Associate (who is an Architect Engineering firm) meeting the requirements specified in Clause No. 5.1.0 (a) (ii) of Item 4.0 of Bid Data Sheet, are required to jointly execute and furnish along with the bid an irrevocable Deed of Joint Undertaking and be jointly and severally liable and bound unto the Employer to perform successfully all the engineering activities Balance of Plant including interface between Main plant and Balance of Plant of EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)**, specified in the Employer's Bidding Documents No. **DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB**, in the event the Bid is accepted by the Employer resulting into a Contract/ Contracts.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. That in consideration of the award of the Contract by the Employer to the Contractor, we, the Associate and the Contractor, do hereby declare and undertake that we shall be jointly and severally liable to the Employer for successful performance of all the engineering activities of Balance of Plant including interface between Main plant and Balance of Plant under the EPC PACKAGE for **KODERMA THERMAL POWER STATION PHASE-II (2X800MW)** as specified under the said Contract(s) to the satisfaction of the Employer.
2. In case of any breach of the Contract committed by the Contractor, we, the Associate, do hereby undertake, declare and confirm that we shall be fully responsible for successful performance of all the engineering activities of Balance of Plant including interface between Main plant and Balance of Plant and undertake to carry out all the obligations and responsibilities under this Deed of Joint Undertaking. Further, if the Employer sustains any loss or damage on account of any breach of the Contract related to engineering activities included in the scope of the Associate, we, the Associate and Contractor, jointly and severally undertake to promptly indemnify and pay such losses/ damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever. Determination of losses/damages shall be in line with provision on Limitation of Liability of the said contract. However, the financial liability of the Associate shall be limited to the value of sub-contract between the Contractor and the Associate. This is without prejudice to any rights of the Employer against the Contractor under the Contract and all guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Associate (with respect to obligations and responsibilities covered under this Deed of joint undertaking), nor any extension of time or any relaxation given by the Employer to the Contractor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Associate and Contractor.
3. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objectives set-forth in paragraph 1 above shall be as follows:
 - a. The Associate will be fully responsible for entire engineering activities covered under the scope of Associate from basic engineering till successful demonstration of performance guarantees, as specified in the Contract to the satisfaction of the Employer. This shall also include (a) Basic engineering, (b) Pre award engineering for system associated with BOP, (c) Post Award engineering covering review and interface Engineering for over all integration of various power plant equipment / packages including review of major design documentation such as design / sizing calculations, layout, plant start-up & control philosophy, schematic drawings and other documentation related to Mechanical, Civil, Electrical and C&I design.

Further, the Associate shall depute their technical experts from time to time to the Contractor's works/ Employer's office/project site as required by the Employer and agreed to by the Contractor and Associate to facilitate the successful performance of all equipment covered under the scope as stipulated in the Contract.
 - b. In the event the Associate and the Contractor fail to demonstrate that the equipment covered under the Contract meets the guaranteed parameters and demonstration parameters as specified in the Contract, the Associate and the Contractor shall promptly carry out all the corrective measures related to engineering activities at their own expense and shall promptly provide corrected design to the Employer.
 - c. Entire engineering activities pertaining to implementation of the corrected design and necessary repairs, replacements, rectification or modifications to the equipment covered

under the scope shall be the joint and several responsibility of the Contractor and Associate.

4. We, the Contractor and the Associate do hereby undertake and confirm that this Deed of Joint Undertaking shall be initially valid till ninety (90) days after the scheduled end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. However, this Deed of Joint Undertaking shall terminate at the latest 24 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. We, the Contractor and the Associate, do further undertake and confirm that this Deed of joint Undertaking shall be irrevocable and shall not be revoked till its validity. We further agree that this Deed of Joint Undertaking shall be without any prejudice to the various liabilities of the Contractor including Contract Performance Security as well as other obligations of the Contractor in terms of the Contract.
5. The Contractor and Associate will be fully responsible for the quality of entire engineering activities covered under the package specification, from basic engineering till successful demonstration of performance guarantees of all equipment for Balance of Plant covered under the contract including interface engineering between Main Plant and Balance of Plant.
6. In case of award, in addition to the Contract Performance Security furnished by the Contractor, the Associate shall furnish as security an on demand Performance Bank Guarantee in favour of the Employer as per provisions of the bidding documents. The value of such Bank Guarantee shall be **INR 1.5 Million (Indian Rupees One and Half Million)** and it shall be guarantee towards the faithful performance/ compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The Bank Guarantee shall be unconditional, irrevocable and initially valid till ninety (90) days beyond the scheduled end of defect liability period of the last equipment covered under the Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by such period of delay. However, this Bank Guarantee shall terminate at the latest 27 months from the scheduled end of defect liability period of the last unit of 800 MW under the Contract. The guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.
7. Any dispute that may arise between the Employer and the Contractor in connection with this Deed of Joint Undertaking shall be finally settled as per the arbitration procedure/ rules mentioned in the Contract Documents.

Any dispute that may arise between the Employer and the Associate in connection with this Deed of Joint Undertaking shall be finally settled by reference to Arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules of 1976. The Arbitral Tribunal shall consist of three members and shall be appointed in accordance with the said Rules. The appointing authority for the Third Arbitrator shall be the President, International Chamber of Commerce, Paris. The language to be used in arbitral proceedings shall be English. The place of arbitration shall be Singapore. The award made in such arbitration shall be final and binding and shall be enforceable in any court of competent jurisdiction.

This deed of undertaking shall be construed and interpreted in accordance with the Laws of India.

8. We, the Associate and the Contractor, agree that this Deed of Joint Undertaking shall form an integral part of the Contracts for this package. We further agree that this Deed of Joint Undertaking shall continue to be enforceable till its validity.
9. That this Deed of Joint Undertaking shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Associate and the Contractor through their authorised representatives have executed these presents and affixed common seal of their respective companies on the day, month and year first mentioned above.

WITNESS :

1.

.....
(Official Address)

For M/s.
(Associate)

.....
(Signature of the Authorised Representative)

Name

Designation

Common Seal of the
Company.....

WITNESS :

1.

.....
(Official Address)

For M/s
(Bidder/Contractor)

.....
(Signature of the Authorised Representative)

Name

Designation

Common Seal of the
Company.....

Note: Power of Attorney of the persons signing on behalf of each of the executants is to be furnished by the bidder and attached along with the signed Deed of Joint Undertaking.

TO:

[EMPLOYERS NAME & ADDRESS]

Sub: Letter to ensure satisfactory performance of *Steam generator and/or *Steam Turbine Generator & Auxiliaries for EPC Package for KODERMA THERMAL POWER STATION PHASE-II (2X800MW); Bidding Document No. : DVC/C&M/ENGINEERING/KTPS(2X800 MW)/EPC/IPHB.

Dear Sirs,

This has reference to your IFB reference no. _____ for the captioned package.

We _____ (Name of Bidder) confirm that ***We / our Indian *Subsidiary/ *JV Company/ *Indian Manufacturing Company** under valid technology transfer agreements for *Steam generator with M/s _____ (Name of Collaborator*/Licensor*/Technology Provider) and for *Steam turbine generator with M/s _____ (Name of Collaborator*/Licensor*/Technology Provider) have acquired technology for supercritical *Steam generator and /or *Steam turbine generator. We further confirm that **we / our Indian *Subsidiary/ *JV Company/ *Indian Manufacturing Company** have fully absorbed the technology regarding design, manufacturing, erection, testing and commissioning for above equipment(s). As per *our/Our Indian *Subsidiary's/*JV Company's / *Indian manufacturing company's technology transfer agreement with **the** *Collaborator/*Licensor/*Technology Provider, ***we / our Indian *Subsidiary/ *JV Company/ *Indian Manufacturing Company** have right to continue the design, manufacturing and supply of these equipment(s) even after expiry of technology transfer agreement.

We confirm that in case of the award of the 'Contract' for the subject package to us, we shall be fully responsible for the satisfactory performance of the *Steam generator sets & auxiliaries and / or *Steam Turbine Generator Sets & Auxiliaries covered under the contract. However, in the event any problem is encountered on *Steam generator sets & auxiliaries and/or *Steam Turbine Generator Sets & Auxiliaries during execution of the contract, we shall resolve the same within reasonable time **(in the opinion of the owner)** by ourselves. In case we are not able to resolve the issue ourselves, we agree to first engage the collaborator and (if required) then engage any technical expert / firm having competency to resolve such issues. If still the problem does not get resolved within reasonable period of time **(in the opinion of the owner)**, OWNER has the option to approach directly to collaborator*/licensor*/technology Provider* or any other party. In such a case the financial expenditure(s) incurred by OWNER for resolution of such issues will be to our account.

We confirm that we have no objection in OWNER approaching to the *Collaborator/*Licensor/*Technology Provider or any other party directly to resolve the problem. We _____ (Name of Bidder) further confirm that there is no binding arrangement between ***us / our Indian *Subsidiary/*JV Company / *Indian manufacturing company** and the ****Collaborator*/Licensor*/Technology Provider"** in this regard.

In case owner exercises the option to approach directly to *Collaborator/*Licensor/*Technology Provider or any other party directly to resolve the problem, the same shall neither relieve us from our obligations to complete the execution of the facilities including guarantee tests in accordance with the contract nor from our obligations during the defect liability period.

(On company Letter Head of the Bidder)

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We, hereby undertake and confirm that this Letter shall be irrevocable and valid up to the end of the defect liability period of the contract.

Signature of Bidder's Authorised signatory: _____

Name _____

Designation _____

Date _____

Common Seal of the Company

Note: Collaborator/Licensors/Technology Provider means the party from which the 'Bidder / its Indian **Subsidiary/JV Company/ Indian Manufacturing Company** has absorbed the technology under Technology transfer agreement.

*** Strike off whichever is not applicable**

Signature Not Verified

Digitally signed by SOUVIK MONDAL
Date: 2023.10.29 14:32:22 IST
Location: eProcurement System for Central
PSUs