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பாரத் ஹெவி இலெக்ட்ரிகல்ஸ் லிமிடெட்
भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
(A Government of India Enterprise)
Tiruchirappalli – 620 014

MATERIALS MANAGEMENT

Phone: 0431 – 257 4166, 4363; E-mail: sbrajesh@bhel.in, jayakishore@bhel.in; www.bhel.com

NOTICE INVITING e-TENDER

Dear Sir/ Ma'am,

Ref : Tender No. 1802400030 dt. 07.03.2024.

Subject : Two-part **e-Tender** inviting techno-commercial and price bids for Supply of ABSORBER MIST ELIMINATOR and Mandatory Spares, Supervision for E & C and Performance Testing.

Kindly submit your competitive offer as per the tender terms and conditions given in the tender document through e-procurement portal <https://eprocurebhel.co.in/> only.

1.	Bid submission start date	18.03.2024, 09:00 Hrs.
2.	Bid submission end date	06.04.2024, 12:00 Hrs.
3.	Bid opening date (Part-I)	06.04.2024, 16:00 Hrs.
4.	Date of price bid opening	The date/ time of price bid opening will be intimated to the techno-commercial qualified tenderer separately.

Note: Change of dates if any will be published as corrigendum. Bidder to check e-procurement portal regularly for updates.

The tender will be evaluated on package basis as indicated below

Package-1: SAGARDIGHI:- Supply of ABSORBER MIST ELIMINATOR, Supervision for E&C, Performance Testing and Mandatory Spares of SAGARDIGHI project.

Package-2: NORTH CHENNAI:- Supply of ABSORBER MIST ELIMINATOR, Supervision for E&C, Performance Testing and Mandatory Spares of North Chennai project.

Refer Annexure-B for the list of items in each package.

Note: There are two sheets in Price Bid BOQ excel. One sheet for each of the above package.

Following list of documents are part of this tender and shall be deemed to form an integral part of contract:

1. Annexure A - Techno - commercial terms and conditions.
2. Technical Specifications and prequalification requirements as mentioned in Annexure-P.
3. No Deviation Format.
4. Local content certification formats.
5. PBG format along with consortium bank list.
6. Annexure-C Brief procedure for conduct of conciliation proceedings.

General Instructions

1. Clarifications required if any shall be send to email ID sbrajesh@bhel.in and jayakishore@bhel.in.
2. Please quote enquiry no., date and due date in all correspondences.
3. This is only a request for quotation and not an order.
4. Bidder to submit the offer through e-procurement portal only. Offer submitted through any other mode will not be considered.

Thanking you,

For Bharat Heavy Electricals Limited


S.B. RAJESH KUMMAR
Dy. Manager / Purchase / BOI
Materials Management
Bharat Heavy Electricals Limited
Tiruchirappalli, Tamil Nadu - 620 014

ANNEXURE B (SCHEDULE OF ITEMS)							
PACKAGE-1 (SAGARDIGHI PROJECT)							
SI.NO	PACKAGE DETAILS	Nature of Supply	Material code	Item Description	Detailed Description	Qty	UOM
1.01	SAGARDIGHI PROJECT (1731)	MAIN SUPPLY	L17311FP86501001	ABSORBER MIST ELIMINATOR	Two stage mist eliminator and accessories (absorber size=9.9 m L X 22.9 m W). Includes manufacturing/ fabrication, shop floor testing, stage inspection, final inspection, painting & Packaging	1	SET
1.02		SPARES SUPPLY	L1731SF986501001	ABSORBER MIST ELIMINATOR WASHING NOZZLES	Absorber Mist Eliminator Washing Nozzles (10% of each type and size for the entire supply/population)	1	SET
1.03			L1731SF986501002	ABSORBER MIST ELIMINATOR MODULE	Absorber Mist Eliminator Modules (5% of each type and size for the entire supply/population)	1	SET
1.04			-	Charges for Performance (Droplet Measurement) Test at Site - ABSORBER MIST ELIMINATOR (absorber size=9.9 m L X 22.9 m W) as per Clause no-12 of Technical Purchase Specification for Mist Eliminator, Ref No: FGD:ME:1731 / Rev No:01	-	1	SET
1.05			-	Lumpsum charges for Supervision of erection and commissioning per ABSORBER MIST ELIMINATOR as per clause 7 (e) of Annexure-A.	-	20	Man Day
PACKAGE-2 (NORTH CHENNAI PROJECT)							
SI.NO	PACKAGE DETAILS	Nature of Supply	Item Code / Make	Item Description	Detailed Description	Qty	UOM
2.01	NORTH CHENNAI PROJECT (8216)	MAIN SUPPLY	L82161FP86501001	ABSORBER MIST ELIMINATOR	Three stage mist eliminator and accessories (absorber size=9.9 m L X 23.9 m W). Includes manufacturing/ fabrication, shop floor testing, stage inspection, final inspection, painting & Packaging.	1	SET
2.02		SPARES SUPPLY	L8216SFP86501001	ABSORBER MIST ELIMINATOR WASHING NOZZLES	Absorber Mist Eliminator Washing Nozzles (10% of each type and size for the entire supply/population)	1	SET
2.03			L8216SFP86501002	ABSORBER MIST ELIMINATOR MODULE	Absorber Mist Eliminator modules (5% of each type and size for the entire supply/population)	1	SET
2.04			-	Charges for Performance (Droplet Measurement) Test at Site - ABSORBER MIST ELIMINATOR (absorber size=9.9 m L X 23.9 m W) as per Clause no-12 of Technical Purchase Specification for Mist Eliminator, Ref No:FGD:ME:8216 / Rev No:01	-	1	SET
2.05			-	Lumpsum charges for Supervision of erection and commissioning per ABSORBER MIST ELIMINATOR as per clause 7 (e) of Annexure-A.	-	20	Man Day

ANNEXURE-P
PRE QUALIFICATION REQUIREMENT

PROVENNESS CRITERIA:

1. Vendor to comply with PROVENNESS CRITERIA as indicated in the Clause No:03 of the Technical Purchase Specification of Mist Eliminator (Doc Ref:- FGD:ME:1731/Rev No:01 for Sagardighi Project package and FGD:ME:8216/Rev No: 01 for North Chennai Project package) and submit along with their technical bid the credentials and other documents to meet the above criteria.

Financial Soundness:

1. Indigenous suppliers shall submit Audited copies of annual reports (Balance Sheets), Profit & Loss statement for the last three years (or from date of incorporation whichever is less) and GST certificate.
2. Import suppliers shall submit latest report from reputed third party business rating agency like D&B /Credit reform etc.

Vendor signature and seal with Date

BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPPALLI-620014

Pressure Parts/PE(FB)



Technical Purchase Specification for

MIST ELIMINATOR

Specification No.: **FGD:ME: 1731**

Revision No.: 01

END CUSTOMER: **WBPDCS SAGARDIGHI (1X660MW)**
BHEL CUSTOMER NO: 1731

01	18-12-2023	3.0	PQR modified to include State utilities and PSU's
00	16-05-2023		Fresh release.
Rev No.	Rev. Date	Clause	Description

	Name	Signature	Date
Prepared & Checked	T.RAJAGOPALAN		18-12-2023
Approved	N NIRMAL RAJ		18-12-2023

This document is meant for the exclusive purpose of bidding against this specification and shall not be transferred, reproduced or otherwise used for purposes other than that for which it is specifically issued.



Technical Purchase Specification for MIST ELIMINATOR

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1.0 APPLICABLE CODES & REGULATIONS

The design and materials shall conform to the requirements of applicable codes and regulations of the latest edition. The design, manufacture, installation and testing of the Mist Eliminator shall follow the latest applicable Indian/International (AISI / ASME/EN/Japanese) Standards.

2.0 INTENT OF SPECIFICATION

This specification covers the minimum requirements for the complete design, material, manufacturing, shop inspection, testing at the manufacturer's works, supervision of erection & commissioning and performance testing of Mist Eliminators along with accessories which is to be furnished in the Flue Gas Desulphurization plant of Coal fired Power Plants. The following points may be noted.

- a. Bidder shall assume full unit responsibility for the entire equipment assembly and make all possible efforts to comply strictly with the requirements of this specification and other specifications/attachments to inquiry/order.
- b. In case, deviations are considered essential by the Bidder (after exhausting all possible efforts), the same shall be separately listed in the Bidder's proposal under separate section, titled as "List of Deviations/Exceptions to the Enquiry Document (**Annexure-IV**)". In case of NIL deviation, bidder has to specify "NIL Deviation" in Annexure-IV. Any deviation, not listed under **Annexure-IV**, even if reflected in any other portion of the proposal, shall not be considered applicable.
- c. No deviation or exception shall be permitted without the written approval of the purchaser.
- d. Compliance to this specification shall not relieve the Bidder of the responsibility of furnishing equipment and accessories/auxiliaries of proper design, materials and workmanship to meet the specified start up and operating conditions.
- e. In case, the Bidder considers requirement of additional instrumentation, controls, safety devices and any other accessories/auxiliaries essential for safe and satisfactory operation of the equipment, the same shall be recommended along with reasons in a separate section and include the same in scope of supply.
- f. All accessories, items of work, though not indicated but required to make the system complete for its safe, efficient, reliable and trouble free operation and maintenance shall also be in supplier's scope unless specifically excluded.
- g. Bidder's equipment shall be designed for and shall meet the service, performance and minimum level of quality requirements specified. Bidder shall be solely responsible for advising End customer in writing of any conflicts between the specifications and Bidder's design, including performance and levels of quality. Bidder agrees that its obligations, liabilities and warranties shall not be diminished or extinguished due to its meeting the requirements of the Specification.



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3.0 PROVENNESS CRITERIA:

“Bidder should have previous experience of design, manufacture, supply, erection and commissioning / supervised erection & commissioning of the Mist Eliminators for Wet Limestone based FGD system for at least one (1) no. 500 MW or higher capacity pulverized coal fired power plant such that respective equipment(s) should have been in successful operation for a period not less than One (1) year prior to Part-I (Techno-commercial) bid opening date”. Necessary document evidences (Unpriced PO copy/ GAD or Datasheet for the reference plant/Performance certificate from end user for the reference plant) for qualification shall be submitted along with the bid.

(or)

“Bidder should have obtained confirmed Order for design, manufacture, supply, erection and commissioning / supervised erection & commissioning of the Mist Eliminators for Wet Limestone based FGD system for at least one (1) no. 500 MW or higher capacity pulverized coal fired power plant prior to Part-I (Techno-commercial) bid opening date for State power utilities or PSU’s, in India”. Necessary documentary evidences (in form of Unpriced PO copy and approved Data sheet, General arrangement Drawing) shall be submitted along with the bid.

The Bidder shall offer only proven design which meets the Provenness criteria indicated above. If bidder doesn’t meet the specified provenness criteria, their offer is liable for rejection.

4.0 SCOPE OF SUPPLY

Scope for the bidders shall include Design, Supply, Testing and Supervision of Erection & Commissioning.

Design: Includes basic engineering, detail engineering, preparation and submission of engineering drawings/calculations/datasheets/quality assurance documents / field quality plans, storage instructions, commissioning procedures, operation & maintenance manuals, performance guarantee test procedures and assisting BHEL in obtaining time bound approval from END CUSTOMER.

The following items shall be Bidder’s scope of design

- Performance Calculation
- Basic Design
- Detailed Fabrication Drawings
- Support Beam Drawing and Loading data for Absorber Design
- Strength Calculation
- Documents for Fabrication, Inspection, Installation, Shipment and Erection & Maintenance works at site.

Supply: Includes manufacturing/fabrication, shop floor testing, stage inspections, final inspections, painting & packing.

Supervision of Erection & commissioning: Includes supervision of erection& Commissioning at site.

Performance testing: Includes outlet Mist Concentration measurement at site as per VDI Norm.



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Supplier's scope shall cover complete Mist Eliminator unit including sub-systems, start-up spares and special tools (typically) as given below. The scope of supply for Mist Eliminators shall include but not limited to the following:

i.	Mist Eliminator modules/panels with end stopper plate for all the stages.
ii.	Flushing pipes with spray nozzles and flange for the front and back wash for all the stages.
iii.	Horizontal member for pipe support with mounting clamps for pipe.
iv.	Vertical member (Leg support- L angle) from the main beam to horizontal pipe support
v.	Inverted U-Clamp (Hanger type) for mounting bottom wash pipe support.
vi.	Pad Plate at the end of the leg support
vii.	All fasteners required for pipe support members , Mist Eliminator panels, etc.
viii.	Fasteners (made of Galvanised steel) and gaskets for the flanges outside absorber as per the drawing
ix.	Any blanking plate, if required, shall be provided by bidder.
x.	3% of Hardware and gaskets supplied shall be provided as erection spares. Any other erection/commissioning spares deemed necessary by the vendor shall be supplied
xi.	Startup Spares as applicable
xii.	Special tools & tackles as applicable
xiii.	Mandatory spares as per requirement
xiv.	Painting and Rust Prevention during shipment and construction
xv.	Export packing and Inland Transportation
xvi.	Supervision of Erection & commissioning at site
xvii.	Residual droplet content measurement at site using VDI Norm 3679.
xviii.	Installation, operation and maintenance manuals
xix.	Any other items required for completeness of the equipment except the items covered in the exclusions.

Bidder shall refer to the drawing enclosed with this specification. Buyer will provide the details of the structures inside/outside absorber after placement of order and Mist Eliminator system shall be designed suitably considering the structures.

4.1	DESIGN AND CONSTRUCTION FEATURES
1.	To separate the entrained droplets, mist eliminators are installed above the absorber spraying zone. Mist Eliminators offered shall be designed, installed, tested and operated so that high availability and high droplet removal efficiency is guaranteed. The residual droplet content shall be measured according to applicable clauses in VDI Norm 3679.



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2.	Material grade for Mist Eliminator chosen by the bidder shall be field proven in previous installation for the corrosive and erosive condition prevailing inside FGD absorber. The Material grade and Number of stages of ME shall be as per Annexure "Selection parameter for Mist Eliminator". The equipment shall be designed to withstand the corrosive and moist environment in which these are proposed to operate.
3.	Provision shall be made for continuous washing of both ends of all the stages except the back wash of the last stage. Wash water arrangement shall also be provided at the back end of the last stage of Mist Eliminators and it is meant for maintenance or during shutdown condition (i.e. back wash of the last stage is designed for intermittent washing).
4.	The Mist Eliminator washing system shall be designed for cyclic washing of different sections. Pneumatically operated valves required for cyclic washing, Platforms for accessing the automatic valves for the spray system will be provided by the buyer.
5.	Entrained Slurry shall be collected by Mist Eliminators downstream of the slurry spray system to avoid carryover of slurry to the Stack.
6.	The ME system shall be equipped with washing and drain provisions, where drains are directed into the absorber. Washing provisions shall include external and internal piping systems with replaceable nozzles, complete with all piping.
7.	The Material of construction for the Mist Eliminator Wash Pipe header shall be as per "Annexure-Selection parameters for Mist Eliminator". The material chosen by the bidder shall be proven and Mist Eliminator vendor shall have experience for the same
8.	Ease of replace-ability and placement of the mist eliminator on maintenance platforms is an important requirement. The ME shall be constructed in individual cells. The design shall safely avoid ME vibration and/or humming. The individual cells shall be sized so that no more than two maintenance personnel are needed to handle them manually when they are fully scaled or plugged, and the cells shall be capable of passing through the access doors for the mist elimination section.
9.	The ME shall be designed to allow for efficient cleaning in process. The mist eliminator system shall be capable of withstanding high velocity spray water jets typically employed during manual cleanings.
10.	Test port openings in absorber wall will be provided by the buyer in the downstream of the mist eliminator to enable performance testing. Test port location shall be recommended by the Mist Eliminator vendor and shall be as per ASME PTC-40.
11.	Easy access for placement and replacement of the mist eliminator shall be incorporated in the design of the mist eliminator arrangement and the absorber vessel. Vendor shall provide recommendations for the same.
12.	Walkways will be provided by the Buyer. However, Size and location of Manholes which are required for installation and replacement of each segment of the Mist Eliminator shall be recommended by the Mist Eliminator vendor.
13.	The headroom shall have a height of more than 2200 mm. Spray pipe level from Mist eliminator shall be less than 700mm.
14.	The mist eliminator support beams shall be designed to act as maintenance walkways approximately 300 mm wide and shall allow for a minimum 500 Kg/m ² load. The support beam/walkways shall provide personnel access to all mist eliminator modules, wash



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	headers and wash nozzles. The support beam will be provided by the buyer. However, bidder shall ensure the design of ME system in such a way that there is place to walk on the beam.
15.	Adequate number of viewing ports with flushing devices connected to automatically operating washing system will be provided by the buyer at following locations: (i) Upstream of 1st stage (ii) Between 1st and 2nd stage (iii) Downstream of 2nd stage. (iv) Downstream of 3rd stage (in case of Three stage ME) Regular flushing will be done in a defined time sequence. Viewing ports locations shall be recommended by the ME vendor.
16.	Internal supports for mist eliminator sections, etc. shall be designed to withstand the flooded weight of the supported section.
17.	All internal piping support members for mist eliminator and flushing system shall be provided as per Annexure" Selection parameter for Mist Eliminator".
18.	The material used for washing nozzles shall be field proven in previous installations.
19.	All fasteners provided for the ME and wash pipe supports shall be as per Annexure" Selection parameter for Mist Eliminator".
20.	The Mist eliminators and its supporting structure shall be designed to carry sufficient load during maintenance.
21.	The formation of agglomeration, deposition & caking shall be avoided. For mist eliminators the bidder shall submit a cleaning procedure including the required safety measures as part of the inspection concept.
22.	Detailed washing procedure for the mist eliminator shall be submitted such as <ul style="list-style-type: none"> • Minimum washing water pressure (MPa) • Minimum Flow rate (m³/hr) • Washing time schedule and sequence • Nozzle type • No of spray nozzles • Size of header pipes • Valve list
23.	Mist Eliminator Panel's support shall be designed in consideration of dirty condition of the Mist Eliminator. Design Load of the Mist Eliminator shall be Mist Eliminator's weight including eliminated liquid weight, clogging and max. allowable pressure drop of the mist eliminator. Blade surface shall be capable of supporting 225 kg of concentrated load, as might be experienced during inspection, while fully plugged with solids.
24.	The thickness of the Mist Eliminator blades shall be as per vendor's proven practice. Vendor shall specify the thickness in their offer.
25.	The spacers to link each panel for restricting the gap between the panels shall be supplied. Provide anchors, Fasteners, spacers and supports shall be provided by bidder to securely hold Mist Eliminator and prevent shifting during operation



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26.	The beam and the outer ring for supporting the Mist Eliminator will be provided by the buyer. All other supports for Wash Pipes shall be taken from the main beam or outer ring supports. Pipe support shall not be taken from Absorber Casing and such arrangements involving support from the casing will not be accepted.
27.	Any gap between absorber wall/Outer ring and mist eliminator should be closed with suitable material to avoid gas escaping Mist Eliminator. The material shall be supplied by bidder.
28.	All the headers shall be of same size. Flow rate shall be uniform over entire washing cycle i.e wash water shall be provided at fixed flow rate.

5.0 GENERAL REQUIREMENTS:

1.	Descriptions in the drawings, in the documents, and in the displays shall be in English
2.	Suitable drain connections shall be provided.
3.	The equipment shall be suitable for stable continuous operation.
4.	Limit of connection: The buyer has an intention to minimize interface for utilities as much as possible. The bidder shall consider this requirement in the planning stage of layout for the equipment. The bidder shall provide the header piping for utilities and branch piping to each nozzle. Terminal points for all utilities shall be located at Absorber wall edge at Mist Eliminator elevation. The bidder shall specify all terminal points with tie-in number in the P&ID and submit it in the proposal to confirm the scope of supply. Refer attached drawing for more details. All interface points shall be bolted connections.
5.	Service life: Entire equipment except wearing parts shall be designed and fabricated for a minimum service life of 30 years of operation or 200,000 full load operating hours whichever is longer.
6.	Corrosion allowance: Corrosion allowance for entire equipment shall be in accordance with latest applicable international standard.
7.	Unless otherwise specified, flanges shall be in accordance with ANSI B16.5 Class 150
8.	Name plate: Nameplate shall be provided indicating the item number and service name. Name plates shall be of 304 Stainless steel plate and placed at a readily visible location. Nameplate of main equipment shall have enough information, which will be confirmed during engineering phase.
9.	Unless otherwise specified, all equipment items where the weight exceeds 15 kg shall be provided with suitable lifting lugs, ears or ring bolts or tapped holes for lifting rings. Minimum shock factor for lifting lugs shall be minimum 2.0. The position of lifting lugs and reference dimension shall be shown on GA and/or outline drawings. NDT shall be conducted for lifting lugs. When any spreader bars are required for lifting and laydown, the bidder shall provide spreader bar with equipment.
10.	Equipment shall be fabricated as much as practical to minimize erection at the site.



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11.	Washing headers support and its clamping arrangement along with fasteners shall be provided by the bidder.
12.	If the Mist eliminator is in the resonance condition or any vibration problems occur, the bidder shall solve the problems in a timely manner.
13.	Bidder shall provide the mating flanges with the necessary gaskets.
14.	All the surfaces of the carbon steel (if any) should be rust prevented before shipment for the period of at least 12 months for storage and construction.
15.	The list of all Bought out items with makes and country of origin to be mentioned along with offer to be submitted.
16.	Quality Plan to be submitted along with the offer.
17.	During entire period of the project, the bidders shall strictly follow and adhere to the guidelines for effective Health & Safety Management. Supply of safety gears/PPE for bidder's/bidder's sub vendor personnel deputed at site for Supervision of E&C, etc. shall be in bidder's scope.
18.	Cost towards the participation in discussions/meetings, providing technical assistance during technical discussions/meetings with customer for approval of drawing/documents etc. TA/DA, boarding and lodging to attend these meetings shall be borne by the bidder and shall be inclusive in supply portion.
19.	Material of construction for all equipment/components shall be subject to BHEL/END CUSTOMER/END CUSTOMER's consultant approval during detail engineering. Accordingly bidder shall consider MOC for all equipment/component as per best engineering practice, global standard and global references.
20.	Bidder to provide sub vendor list and Bidder shall strictly adhere to BHEL/END CUSTOMER approved vendor list.
21.	<p>The modalities of inspection (Stage, Final, In-process) shall be finalized during detail engineering after submission of quality assurance plan (QAP). It shall be reviewed by the END CUSTOMER/END CUSTOMER's consultant and BHEL. Bidder shall follow the procedures of inspection as per the approved QAP. Bidder has to submit the following documents along with inspection call and if any other documents required as per approved QAP.</p> <ul style="list-style-type: none"> - Raw material inspection certificate - Internal test reports - Statutory certificates as required. - All inspection & testing shall be carried out based on the following documents: <ul style="list-style-type: none"> a. Relevant Standards b. Specifications c. Approved drawings



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	<p>d. Data Sheets</p> <p>e. Calibration certificate for all the measuring instruments</p> <p>f. Bidder should also coordinate in getting the MDCC's (Material Dispatch clearance certificate) and all types of IC's (Inspection Certificates) from the End customer/End customer's consultant along with BHEL.</p>
22.	Any shim plates for erection of equipment / item at site shall be in the scope of bidder.
23.	During detail engineering, bidder to strictly adhere to BHEL/END CUSTOMER/END CUSTOMER's consultant drawing formats, document numbering, quality plan & FQP formats
24.	The identification and numbering of equipment, systems, items, etc. of supply, as well as of all documents and drawings shall be in accordance with the VGB guideline RDS-PP (Reference Designation System for Power Plants - KKS system).
25.	Complete detail engineering drawings, calculations, selection of components etc. shall be reviewed & subject to approval of BHEL/END CUSTOMER/END CUSTOMER's consultant during detail engineering
26.	Bidder shall furnish necessary inputs & drawings of all equipment in editable Auto CAD/ MS-Word /Excel format.
27.	During detail engineering, successful bidder shall ensure flow of drawings/documents as per schedule. Any comments from BHEL/END CUSTOMER/END CUSTOMER's consultant should be addressed timely by the bidder.
28.	Bidder to note that list above is not exhaustive and any work /items required for completing the smooth operation and ensuring satisfactory running of the machines till final hand over to the end user shall also be in the scope of the bidder.
29.	<p>Bidder shall submit the signed and stamped copy of all the pages which constitutes this technical enquiry specification signed by authorized signatory and clearly mentioning each clause under following two categories to avoid any ambiguity in scope understanding & the scope division along with technical offer.</p> <p>a. "Accepted without deviation and considered in scope of work"</p> <p>b. "Not considered in scope of work".</p>
6.0	PACKING AND FORWARDING
1.	<p>Proper packing to be ensured.</p> <p>Indigenous Supply: The equipment shall be wrapped in polythene bags & packed in a strong rigid wooden crate. Rain water should not enter into the equipment during storage in the outer yard of power plant.</p> <p>Imported Supply: All imported supply (supplies from outside India) should be packed as per Sea worthy packing specification no. PE-TS-888-100-A001. All imported items should have Sea worthy packing. Liberal packing materials and struts shall be provided to arrest rolling and to protect from transit damages</p>



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2.	Cardboard containers shall be enclosed in a solid wooden container
3.	Equipment and process materials shall be packed and semi-knocked down, to the extent possible, to facilitate handling and storage and to protect bearings and other machine surfaces from oxidation. Each container, box, crate or bundle shall be reinforced with steel strapping in such a manner that breaking of one strap will not cause complete failure of packaging. The packing shall be of best standard to withstand rough handling and to provide suitable protection from tropical weather while in transit and while awaiting erection at the site.
4.	Equipment and materials in wooden cases or crates shall be properly cushioned to withstand the abuse of handling, transportation and storage. Packing shall include preservatives suitable to tropical conditions. All machine surfaces and bearings shall be coated with oxidation preventive compounds. All parts subject to damage when in contact with water shall be coated with suitable grease and wrapped in heavy asphalt or tar impregnated paper.
5.	Crates and packing material used for shipping will become the property of owner.(END CUSTOMER)
6.	Packing (tare) shall be part of the equipment cost and shall not be subject to return. The packing should ensure integrity and cohesiveness of each delivery batch of equipment during transportation. In case of equipment assemblies and unit's delivery in the packing of glass, plastics or paper the specification of packing with the material and weight characteristics are to be indicated.
7.	Each package should have the following inscriptions and signs stenciled with an indelible ink legibly and clearly: <ul style="list-style-type: none"> a. Destination b. Package Number c. Gross and Net Weight d. Dimensions e. Lifting places f. Handling marks and the following delivery marking
8.	Each package or shipping units shall be clearly marked or stenciled on at least two sides as follows. <p style="text-align: center;">BHEL SITE OFFICE, "ADDRESS OF THE PROJECT SITE AS PER ENQUIRY/ PO " INDIA</p> <p>In addition, each package or shipping unit shall have the symbol painted in red on at least two sides of the package, covering one fourth of the area of the side.</p>
9.	Each part of the equipment which is to be shipped as a separate piece or smaller parts packed within the same case shall be legibly marked to show the unit of which it is part, and match marked to show its relative position in the unit, to facilitate assembly in the field. Unit marks and match marks shall be made with steel stamps and with paint.



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10.	Each case shall contain a packing list showing the detailed contents of the package. When any technical documents are supplied together with the shipment of materials no single package shall contain more than one set of such documents. Shipping papers shall clearly indicate in which packages the technical documents are contained.
11.	The case number shall be written in the form of a fraction, the numerator of which is the serial number of the case and the denominator the total number of case in which a complete unit of equipment is packed.
12.	Wherever necessary besides usual inscriptions the cases shall bear special indication such as "Top", "Do not turn over", "Care", "Keep Dry" etc. as well as indication of the center of gravity (with red vertical lines) and places for attaching slings (with chain marks)
13.	Marking for Safe handling: To ensure safe handling, packing case shall be marked to show the following: <ul style="list-style-type: none">a. Upright positionb. Sling position and center of Gravity positionc. Storage categoryd. Fragile components (to be marked properly with a clear warning for safe handling)
14.	Each crate or package is to contain a packing list in a waterproof envelope. All items are to be clearly marked for easy identification against the packing List. All cases, packages etc. are to be clearly marked on the outside to indicate the total weight where the weight is bearing and the correct position of the slings are to bear an identification mark relating them to the appropriate shipping documents. All stencil marks on the outside of cases are either to be made in waterproof material or protected by shellac or varnish to prevent obliteration in transit.
15.	The packing slip shall contain the following information: - Customer name, Name of the equipment, Purchase Order number with Date, Address of the delivery site, Name and Address of the Sender, Serial Number of Mist Eliminator & accessories, BHEL item Code, Gross Weight and Net weight of Supplied items.
16.	Prior to transport from manufacturer's work to destination, components of the unit shall be completely cleaned to remove any foreign particles. Flange faces and other machined surfaces shall be protected by an easily removable rust preventive coating followed by suitable wrapping.
17.	All necessary painting, corrosion protection & preservation measures shall be taken as specified in painting schedule. Supplier shall consider the coastal environment zone which is defined as "very severe" during final finishing/shipping.
18.	Successful bidder shall furnish the detail packing /shipment box details with information like packing box size, type of packing, weight of each consignment, sequence no. of dispatch, no. of consignment for each deliverable item against each billing break up units/ billable blocks. Without these details the BBU shall not be approved during detail engineering. Also, complete billing break-up with above mentioned details shall be submitted within 10days of LOI.
19.	All items/equipment shall be dispatched in properly packed condition (i.e. no item shall be dispatched in loose condition such that it becomes difficult to store/identify its location at site at a later stage).



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20.	Cases which cannot be marked as above shall have metal tags with the necessary markings on them. The metal tags shall be securely attached to the packages with strong steel binding wire. Each piece, Skid, Case or package shipped separately shall be labelled or tagged properly.
7.0	SUPERVISION OF ERECTION AND COMMISSIONING
1.	The erection of Mist Eliminator and washing system will be done by buyer as per Erection Manual and check List provided by the bidder. However, the bidder shall visit Mist Eliminator System/Absorber for the supervision of erection and commissioning.
2.	There will be one visit for each Mist Eliminator system or Absorber. Total No of Visit shall be as per Enquiry/PO. The bidder will be informed well in advance for the visit. No of days required supervision shall be as per enquiry/PO.
3.	TA/DA, Travel expenses, boarding and lodging shall be borne by the bidder and shall be inclusive in supervision portion.
8.0	DROPLET MEASUREMENT/PERFORMANCE TESTING AT SITE
1.	Bidder has to measure residual droplet at Mist eliminator outlet as per approved procedure for all the Mist Eliminators at site. The bidder will be informed well in advance for conducting the performance test (droplet measurement).
2.	Bidder has to complete the test for all the units as per enquiry/PO. TA/DA, travel expense, boarding and lodging, cost for bringing the testing kit to site shall be borne by the bidder and shall be included in the performance testing charges.
9.0	EXCLUSION
	The following work associated with the Mist Eliminator will be by BHEL: <ul style="list-style-type: none"> a. Mist Eliminator Wash Pumps b. Piping from ME Wash pumps to Absorber wall at Mist eliminator elevation. c. Pneumatic operated valves d. Support beams and outer ring inside the casing to support the ME e. Absorber casing and Nozzles.
10.0	INSPECTION AND TESTING
1.	Bidder shall furnish written copies of shop production, fabrication and quality test procedures and drawings for review by BHEL/END CUSTOMER prior to manufacture. Inspection of above mentioned tests by BHEL representative at bidder's works is envisaged.
2.	The Bidder shall furnish performance test procedure along with measurement standard. The procedure will be reviewed and approved by the BHEL/END CUSTOMER.
3.	Final inspection and release by the BHEL/END CUSTOMER is a mandatory requirement unless specially waived.



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4.	Acceptance tolerance of actual versus guaranteed performance for Droplet removal efficiency and Pressure drop shall be as per applicable standard.
5.	Mist Eliminator shall not be released for shipment, until shop tests data have been approved by BHEL/End Customer.
6.	Bidder should furnish performance guarantee as per applicable standard guarantee for the design, manufacture, material and safe operation of the equipment's.
7.	BHEL/END CUSTOMER shall witness the test at Bidder's works and a notice of minimum three (3) weeks shall be given for attending the inspection.
8.	Bidder to arrange all calibrated gauges, Instruments during inspection.
9.	Bidder to arrange Instruments and all accessories for the measurement at site as per applicable clauses VDI Norm 3679.
10.	The performance test & droplet measurement may be carried out at site for Guarantee conditions and shall be converted to the design condition.
11.0	SPARES, TOOLS & TACKLES
1	<p><u>START UP & COMMISSIONING SPARES</u></p> <p>Start-up & Commissioning Spares shall be part of the main supply of the Mist Eliminator & sub system.</p> <p>Start-up & commissioning spares are those spares which may be required during the start-up and commissioning of the equipment/system. The following startup/erection & commissioning spares shall be supplied by bidder along with main supply free of cost: All hardware's and gasket – 3%.</p> <p>In addition to the above, any other spares required for Start-up and commissioning deemed necessary by the bidder shall be supplied. The spares must be available at site before the equipment's are energized.</p>
2	<p><u>RECOMMENDED SPARES</u></p> <p>Bidders shall also furnish the Recommended spares list along with the offer required for 3 years of normal operation of the plant and should be independent of the list of the mandatory spares. Prices of recommended spares will not be used for evaluation of the bids. The price of these spares will remain valid up to 6 months after placement of Notification of Award for the main equipment.</p>
3	<p><u>MANDATORY SPARES:</u></p> <p>Bidder to quote for the mandatory spares as per enquiry/PO. Bidder shall quote for the "Mandatory spares", and it will be considered for L1 evaluation. Mandatory spare items shall be handed over separately and shall not be mixed with the supply of the main equipment parts. Spares shall not be dispatched before dispatch of corresponding main equipment. The mandatory spares shall be clearly identifiable and suitable tagging shall be made by the bidder.</p> <p>All spares supplied under this contract shall be strictly inter-changeable with the parts for which they are intended for replacements. All the mandatory spares shall be manufactured as per same specification and quality plan of the main supply.</p> <p>Mandatory spares will be in percentage of main supply. However, while quoting, vendor to indicate quantity in numbers against percentage for each type. If derived quantity of</p>



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	<p>mandatory spares is in fraction, then next higher side whole number has to be considered. In the event of ordering, PO will be released on rate per number basis, for the above firm quantity only.</p> <p>However, the price of Mandatory spare prices shall be kept valid for minimum 2 years from the date of dispatch of the of mandatory spares, to enable BHEL to place order further orders, if any, in case of additional requirement. The quantity of additional order may be less than or equal to the mandatory spares quantity indicated in the tender.</p>
4	<p><u>SPECIAL TOOLS & TACKLES:</u></p> <p>Any special tools & tackles required for the entire equipment to disassemble, assemble or maintain the units, they shall be included in the quotation and furnished as part of the initial supply. List of special tools & tackles shall be decided by bidder as per his proven practice. When special tools are provided, they shall be packaged in separate, boxes with lugs and marked as "Special Tools for (tag / item number)." Each tool shall be stamped or tagged to indicate its intended usage. Levers and eye bolts for the removal of parts to be serviced shall be submitted with special tools.</p>
12.0	DROPLET MEASUREMENT/PERFORMANCE TESTING AT SITE, PERFORMANCE GUARANTEE
1.	Bidder has to measure residual droplet at Mist eliminator outlet as per approved procedure for all the Mist Eliminators at site. The bidder will be informed well in advance for conducting the performance test (droplet measurement).
2.	Bidder has to complete the test for all the units as per enquiry/PO. TA/DA, travel expense, boarding and lodging, cost for bringing the testing kit to site shall be borne by the bidder and shall be included in the performance testing charges. All performance tests for Mist Eliminators shall be carried out in accordance with any latest international codes/standards.
3.	<p>The mist eliminator outlet droplet content shall be guaranteed as follows at absorber outlet measured over a period of 24 hrs continuous operation.</p> <ol style="list-style-type: none"> I. $\leq 20 \text{ mg/Nm}^3$ (in case of three stage Mist Eliminator) II. $\leq 50 \text{ mg/Nm}^3$ (in case of two stage Mist Eliminator)
4.	Mist outlet-droplet content shall be measured as per applicable clauses in VDI Norm 3679 and the Contractor shall carry out the tests as per the test procedure approved by the Employer.
5.	Bidder shall furnish Performance guarantee for the design, manufacture, material, safe and trouble-free operation of the Mist Eliminator and its accessories
6.	Maximum Pressure drop across M/E at Design Point condition (as per "Selection parameter for Mist Eliminator") is to be guaranteed. It shall be measured at Guarantee point conditions in site and shall be converted to the design condition.
7.	The Bidder shall ensure a design of the equipment to achieve an average target availability of 98% for 120 days and average target availability of 95% for 1 year
8.	In the event that the performance test is unsuccessful in meeting performance guarantees, bidder shall take necessary remedial action at his cost and the performance test shall be repeated.



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13.0	WARRANTY:
1.	The Bidder shall warrant that the equipment's/items shall be free from defects in the design, engineering, materials and workmanship of the Plant and Equipment supplied and of the work executed. The Warranty period shall be 24 months from the date of supply or 18 months from the date of commissioning, whichever first occurs. 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 Bidder, the Bidder shall promptly, in consultation and agreement with BHEL regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as the Bidder shall, at its discretion, determine) such defect as well as any damage to the Facilities caused by such defect.
2.	In case of failure of the equipment to meet the guarantee, END CUSTOMER/BHEL reserves the right to reject the equipment. However, END CUSTOMER/BHEL reserves the right to use the equipment until new equipment supplied by bidder meets the guaranteed requirement.
14.0	TRAINING
	Successful bidder shall provide comprehensive training for END CUSTOMER/BHEL Engineering, O&M, Erection & Commissioning staffs at site covering all aspects of the ME system - Operation & Maintenance, Troubleshooting, cleaning procedure etc.
15.0	DOCUMENTATION
	<p>List of Drawings or documents to be submitted after award of contract is enlisted. Drawings that are reviewed by the END CUSTOMER/ BHEL will be returned to bidder with a transmittal letter with any comments and / or questions marked on the drawings or noted in the letter. All comments and questions must be resolved before a resubmission of drawings / documents. If the design has not developed enough to resolve some of the comments or questions, bidder shall place a "hold" on those items or areas of design. END CUSTOMER/ BHEL reserves the right to return drawings unprocessed to bidder if there exists any evidence that bidder has not acknowledged all comments and questions.</p> <p>All necessary GA drawings, sections, sub-assembly drawings, specifications of main and sub components and necessary set of operation & maintenance manual as asked by END CUSTOMER must be furnished by bidder in soft and hard copy forms. For all documents softcopy format shall be searchable pdf, however in addition all drawings, diagrams like P&IDS shall be supplied in ACAD or other editable format and all lists in Excel format. Further break up of technical documents will be discussed during finalization of the purchase contract.</p> <p>Unless agreed otherwise, Ten (10) hard copies and five (05) sets of electronic copies of all documents are to be submitted in the English language. Electronic Copies shall be submitted in primary original data format (e.g. DOC, XLS, DWG) as well as in a printable non-proprietary document format (e.g. PDF). Especially P&IDs shall be</p>



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submitted as DWG files and PDF files. Bidder to ensure submission of hard copies as per END CUSTOMER requirement for all engineering drg/doc and for all subsequent revisions along with a soft copy through email to concerned project team.
However all the engineering related information shall be furnished in soft form to BHEL.



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DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID

Sl. No.	Description
1.	Documents for meeting the Qualification Requirement
2.	Reference plant list (as per Annexure-I)
3.	Compliance to Specification – Duly signed and stamped by the bidder
4.	Data Sheet for Mist Eliminator(as per Annexure-II)
5.	General arrangement and the cross-sectional drawing of the Mist Eliminator & its accessories.
6.	Schedule of Guarantee (as per Annexure-III)
7.	Deviation list (as per Annexure-IV)
8.	Performance characteristic curves of Mist Eliminator
9.	Washing System data calculation sheet and Washing sequence
10.	Utility List & Required Pump Capacity
11.	Mandatory spares list.
12.	Start-up, Erection and commissioning spares list.
13.	Recommended Spares List for 3 Year's Normal Operation
14.	Proforma Packing List
15.	Approximate weight of each skid
16.	Support beam details and loading data
17.	Sub-Vendor List
18.	Scope of Supply
19.	Quality Plan
20.	List of Special Tools
21.	Delivery Schedule
22.	Droplet Measurement procedure
23.	WPS & PQR arrangement
24.	Man-holes, Viewing Ports, Sampling ports, measuring ports & Wash Pipe flange location & details
25.	Catalogue
26.	Terminal Point details
27.	Bill of Materials along with material and codes



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DOCUMENTS TO BE SUBMITTED AFTER AWARD OF CONTRACT

Sl. No.	Description	No of copies	Delivery Time
1.	General arrangement and the cross-sectional drawing of the Mist Eliminator & its accessories.	1	2 weeks after contract
2.	Isometric (3D) Drawing of the Mist Eliminator & it accessories	1	1 month after award
3.	Data Sheet for Mist Eliminator	1	2 weeks after contract
4.	Performance characteristic curves of Mist Eliminator	1	2 weeks after contract
5.	Washing system data calculation sheet, Washing sequence.	1	2 weeks after contract
6.	Utility List & Required Pump Capacity	1	2 weeks after contract
7.	Support beam drawing & loading data	2	2 weeks after contract
8.	Strength & performance Calculation	1	2 weeks after contract
9.	Mandatory spares list.	1	2 weeks after contract
10.	Erection and commissioning spares list.	1	2 weeks after contract
11.	Recommended Spares List for 3 Year's Normal Operation	1	2 weeks after contract
12.	Special tools list	1	2 months after contract
13.	Inspection and Test Procedure	1	1 month after contract
14.	Installation and assembly procedure	1	4 months after contract
15.	Quality Plan	4	1 month after contract
16.	Inspection & Test record	1	In 2 weeks after test
17.	Inspection Certificate	1	In 2 weeks after test
18.	Material Test Certificates	2	In 2 weeks after test
19.	Sub vendors List	1	2 weeks after contract
20.	Manufacturing Schedule	1	2 weeks after contract
21.	Progress report	1	Every month
22.	Proforma Packing List	1	2 months prior to shipping
23.	Approximate weight of each skid	1	2 months after contract
24.	Pre Commissioning Check List	2	4 months after contract
25.	Droplet Measurement procedure	2	1 month after contract
26.	WPS & PQR	2	2 weeks after contract
27.	Catalogue	2	2 weeks after contract
28.	Operation and Maintenance Manual Cleaning and repair procedure	• 10 hardcopies and 5 electronic copies in English	4 months after contract



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16.0 ANNEXURES

ANNEXURE – I

a) REFERENCE LIST as per format shown below. (at least One (1) reference plant details)

S. No.	Project Name , Customer & Plant capacity	Coal fired Yes/No	Wet Limestone Based FGD Yes/No	Model	Flue gas flow Nm ³ /hr	Size	Outlet Mist Concentration mg/Nm ³	Commissioned date	Qty

NOTE: Necessary document as mentioned in CL3.0 Provenness criteria to be submitted.

SIGNATURE OF BIDDER -----

NAME -----

DESIGNATION -----



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ANNEXURE – II- TECHNICAL DATA SHEET

Enquiry No: _____

Project: _____

Sl. No	Description	Data
1.0	GENERAL	
	a. Buyer	: BHEL-HPBP Trichy
	b. Project	:
	c. End Customer	:
	d. Location	:
	e. Service	: Continuous
	f. Installation	: In-door
	g. Total number of Mist Eliminators and Accessories (No of sets)	:
2.0	MANUFACTURER DETAILS	
	a. Model	:
	b. Type	:
	c. No of stages	:
	d. Vane type for Coarse & Fine separators	:
	e. Pitch details for Coarse & Fine separators	:
	f. Weight data	:
	g. Flushing system details	:
	(i) Nozzle Details:	1 st stage 2 nd stage 3 rd stage (if applicable)
	Type of Nozzle	
	Spray angle	
	Size	
	Thread	
	Flow rate	
	Nominal size	
	(ii) No of nozzles for upstream wash	
	(iii) No of nozzles for downstream wash	
3.0	OPERATING CONDITION	: "Shall be as per Selection parameters for Mist Eliminator"
4.0	PERFORMANCE DATA	
	a. Face Velocity m/s	:
	b. Pressure Drop hPa(G)	:
	c. Limit Drop Size Micron	:
	d. Temperature resistance of ME System Deg C	: "Shall be as per Selection parameters for Mist Eliminator"
	e. Performance curves	: Bidder to Provide



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	(i) Pressure Drop Vs Gas Velocity (ii) Outlet Mist Load vs Gas Velocity (iii) Limit Drop Size vs Gas Velocity (iv) Collection Efficiency vs Drop Size		
	f. Washing sequence & Valve List	:	Bidder shall submit the washing sequence with detailed write up
	g. Utility list & required Pump Capacity	:	Bidder to Provide
5.0	MATERIALS		
	a. ME Panel	:	
	b. Washing Pipe	:	
	c. Wash Pipe Supports	:	
	d. Washing Nozzles	:	
	e. Hardwares	:	

7.0 WASHING ARRANGEMENT

7.1	Washing water condition	
a.	Flow rate - Average	Bidder to provide
b.	Flow rate – Instantaneous Allowable Max	“Shall be as per Mist Eliminator Selection Parameters for the project”
c.	Feed Pressure (at inlet flange of ME Wash header)	“As per tender specification”
d.	Spray pipe level from ME Panel	< 700 mm

7.2	Washing Method						
		First Stage		Second Stage		Third stage (if applicable)	
		Front Surface	Back Surface	Front Surface	Back Surface	Front Surface	Back Surface
a.	Total Washing Area m ²						
b.	No of divided sections						
c.	Washing Water Source						
d.	Washing Water Average Flow rate m ³ /h	*	*	*	*	*	*
e.	Instantaneous Max Water Flow rate m ³ /h	*	*	*	*	*	*



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f.	Duration of One washing for One Divided Section Sec	*	*	*	*	*	*
g.	Time of One washing Cycle (min)	*	*	*	*	*	*
h.	* Bidder to fill the value						
i.	Note: Last/Final stage back surface washing - only for Maintenance						

SIGNATURE OF BIDDER -----

NAME -----

DESIGNATION -----



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ANNEXURE III- SCHEDULE OF GUARANTEES

Enquiry No: _____

Project: _____

Sl. No	Description	Data
1.	Mist eliminator outlet droplet content at absorber outlet measured over a period of 24 hrs continuous operation. (in case of three stage ME) * mg/Nm^3	: $\leq 20 \text{ mg/Nm}^3$
	Mist eliminator outlet droplet content at absorber outlet measured over a period of 24 hrs continuous operation. (in case of two stage ME) *	$\leq 50 \text{ mg/Nm}^3$
2.	Total Pressure drop across M/E at design point condition (in case of three stage ME) mmwc(G)	: $< 20 \text{ mm WC}$
	Total Pressure drop across M/E at design point condition (in case of two stage ME) mmwc(G)	$< 15 \text{ mm WC}$
3.	Equipment Availability (%)	
	Equipment Availability for 120 days	: 98 %
	Equipment Availability for 1 year %	%

*Strike off whichever is not applicable

SIGNATURE OF BIDDER _____

NAME _____

DESIGNATION _____



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ANNEXURE – IV- LIST OF DEVIATIONS/EXCEPTIONS TO THE ENQUIRY DOCUMENT

Enquiry No: _____

Project: _____

SI No	Clause No	Page No	Description of Deviation

Note: Enlarge the table to incorporate items. In case of NIL deviation, bidder has to specify “NIL Deviation”.

SIGNATURE OF BIDDER _____

NAME _____

DESIGNATION _____



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17. SELECTION PARAMETER FOR MIST ELIMINATOR

A -TECHNICAL INFORMATION

Sl. No.	Description	Requirement	
1.	End Customer	WBPDCCL	
2.	Project Name	WBPDCCL SAGARDIGHI (1X660MW)	
3.	Location	PO: Manigram PS: Sagardighi Dist: Murshidabad (West Bengal) PIN: 742237	
4.	Type	Two stage chevron type.	
5.	Material of construction of Mist Eliminator		
i.	ME Panel	FRP or polypropylene	
ii.	Washing Pipe	Polypropylene	
iii.	Wash Pipe Supports	Polypropylene	
iv.	Washing Nozzles	PVDF (polyvinylidene fluoride) or PP (Polypropylene) as per bidder’s proven practice.	
v.	Hardware inside absorber	a) Alloy S31254 for load bearing application. b) PVDF for non-load bearing	
vi.	Enclosure Plate	To be decided as per Mist Eliminator vendor recommendation.	
6.	Quantity		
i.	Quantity of Mist Eliminator	1 set (1 set means Complete Mist Eliminators, Washing systems and accessories)	
7.	Parameters		
i.	Gas flow	Vertical	
ii.	Casing Dimension	Length: 9900 mm Width : 22900 mm	
iii.	Design Pressure of Mist Eliminator Panel	660 mmH ₂ O (G)	
iv.	Max Allowable Pressure drop across Mist Eliminator element	15 mmH ₂ O (G) at Design point 12 mmH ₂ O (G) at Guarantee point	
v.	Design Temperature	* 70 Deg C (Continuous) * 80 – 90 Deg C (30 minutes) * 90 – 110 Deg C (5 min)	
8.	Gas condition at ME Inlet	Guarantee Point	Design Point
i.	Gas Flow Rate (Nm ³ /s-wet)	630.71	709.75
ii.	Gas Flow Rate (m ³ /s-wet)	774.37	879.17
iii.	Gas Temperature (Deg C)	62.2	65.2
iv.	Density (kg/m ³)	1.00352	0.98090
v.	Operating Pressure at Mist Eliminator inlet (mm H ₂ O (G))	40	50
vi.	Gas Flow Distribution	+ or - 20%	



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Sl. No.	Description	Requirement	
9.	Gas Composition at ME Inlet		
i.	SO ₂ (Vol%-wet)	0.0029	0.0028
ii.	H ₂ O (Vol%-wet)	21.3525	24.4353
iii.	O ₂ (Vol%-wet)	4.0874	4.0067
iv.	CO ₂ (Vol%-wet)	9.7352	9.2925
v.	N ₂ (Vol%-wet)	64.8213	62.2617
vi.	HCl (ppm-Dry)	<2	<2
vii.	HF (ppm-Dry)	<1	<1
viii.	Dust (mg/Nm ³ -wet)	<30	<30
10.	Gypsum Slurry Density(kg/m3)	1205	1206
11.	Entrained Mist Condition:		
i.	Mist Concentration at Inlet –at Guarantee & Design Point	200 g/Nm ³ -dry	
ii.	Mist Concentration at Outlet –at Guarantee & Design Point	≤50 mg/Nm ³ -dry	
12.	Mist Composition		
i.	Solid	30 wt.%	
ii.	Cl ⁻	14826 ppm	
iii.	Mg ²⁺	11685.83 ppm	
iv.	Ca ²⁺	481.03 ppm	
v.	Na ⁺	999.006 ppm	
vi.	SO ₄ ²⁻	26657.02 ppm	

B- WASHING ARRANGEMENT

I.	Washing water condition	
a.	Flow rate - Average	28.5 m ³ /hr (vendor shall decide)
b.	Flow rate at M/E Inlet – Instantaneous Allowable Max	120 m ³ /hr
c.	Flow rate at M/E Inlet – Instantaneous Min	100 m ³ /hr
d.	Feed Pressure (at inlet flange of ME Wash header)	0.2 MPa (Max)
e.	Spray Nozzle –Top washing	90 °, Full Cone
f.	Spray Nozzle –Bottom washing	120 °, Full Cone
g.	Spray pipe level from ME Panel	< 700 mm



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II.	Washing Method	First Stage		Second Stage	
		Front Surface	Back Surface	Front Surface	Back Surface
a.	Total Washing Area m ²	9.9 x 22.9	9.9 x 22.9	9.9 x 22.9	9.9 x 22.9
b.	Washing Water Source	Refer Clause C			
c.	Washing Water Average Flow rate m ³ /h	*	*	*	*
d.	Instantaneous Max Water Flow rate m ³ /h	*	*	*	*
e.	Duration of One washing for One Divided Section Sec	*	*	*	*
f.	Time of One washing Cycle (min)	*	*	*	*
	*Washing method shall be confirmed by the vendor. ** Only for Maintenance *1) shall be finalized by vendor				

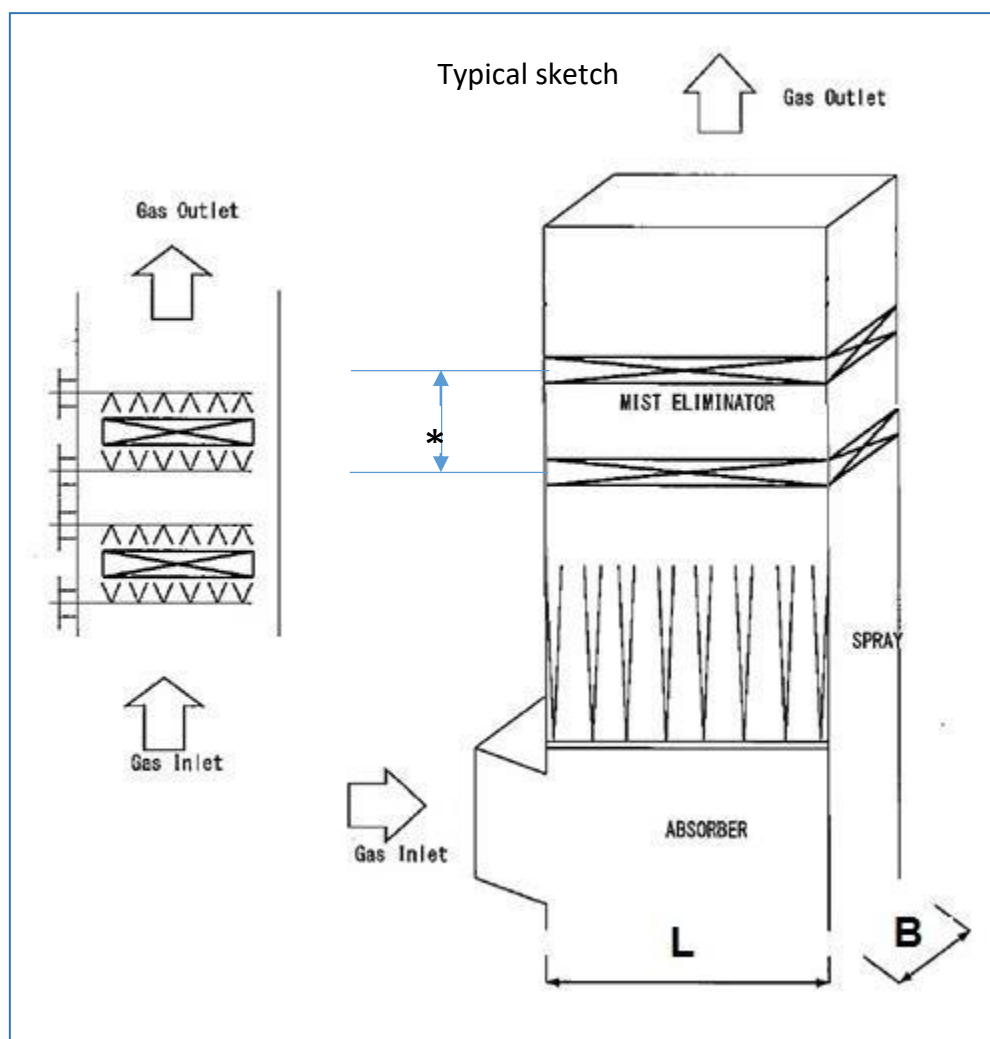
C- WATER ANALYSIS

Process water is envisaged for Mist Eliminator washing. Process water analysis is provided below.

DESIGN CLARIFIED WATER ANALYSIS

CONSTITUENTS	As	CONTENT
Calcium	CaCO ₃	105 ppm
Magnesium	CaCO ₃	52 ppm
Sodium and Potassium	CaCO ₃	138 ppm
Hydrogen (FMA)	CaCO ₃	--
TOTAL CATIONS	CaCO ₃	295 ppm
Bicarbonate	CaCO ₃	196.5 ppm
Carbonate	CaCO ₃	-
Chloride	CaCO ₃	41 ppm
Sulphate	CaCO ₃	57.5 ppm
Nitrate	CaCO ₃	-
TOTAL ANIONS	CaCO ₃	295 ppm
M.O. Alkalinity	CaCO ₃	196.5 ppm
P. Alkalinity	CaCO ₃	
Total Hardness	CaCO ₃	157 ppm
Carbon-di-oxide	CO ₂	3.5
Dissolved Silica	SiO ₂	20 ppm
Total Iron	Fe	1 ppm
pH Value	-	7.9 – 8.0
Turbidity, NTU	-	20
Organic Matter Content in terms of Oxygen in absorbed from (KMnO ₄ (4 Hrs.))		5 ppm

D- MIST ELIMINATOR ARRANGEMENT AND MIST PARTICLE SIZE DISTRIBUTION:



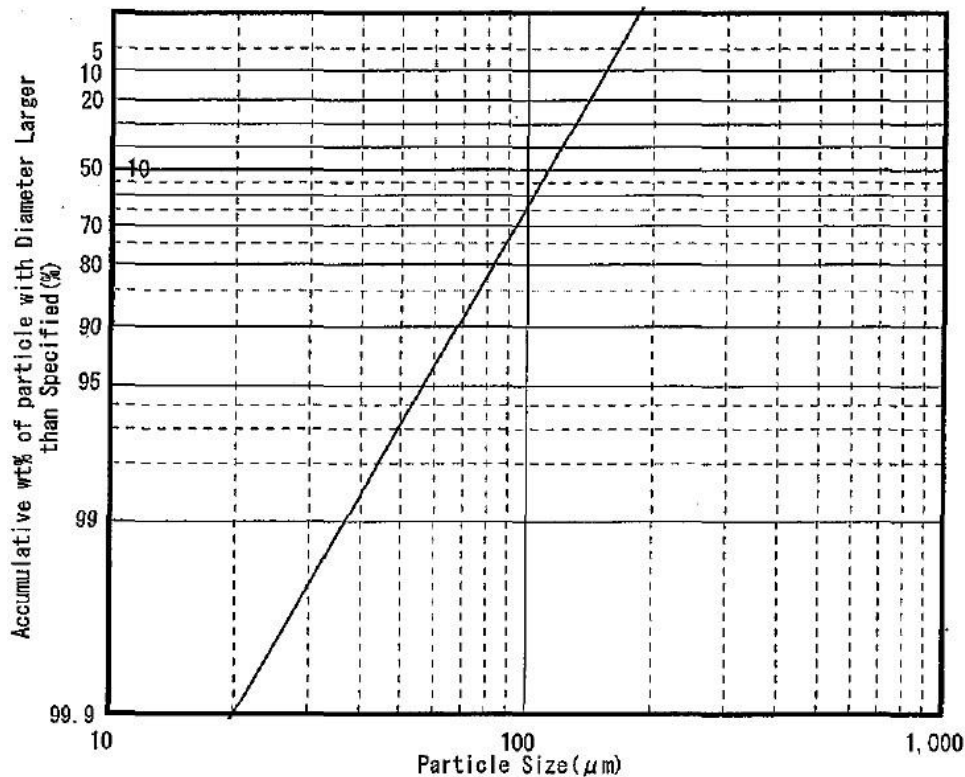
660 MW L-Length - 9,900 mm, W-Breadth - 22,900 mm

* The distance shall not exceed 2600 mm

Note: Bidder to decide the spray washing arrangement considering the water flow rate mentioned above.

E - MIST PARTICLE SIZE DISTRIBUTION

Fig.2 Mist Particle Size Distribution(EXPECTED VALUE)



F. Mandatory beam locations:

1. For SAGARDIGHI 1X 660 MW, the size of the Absorber is 9900 mm Length X 22900 mm Width. The dimensions indicated are of absorber outer to outer dimension. Bidder shall note that there is a column tie beam located at the centre of the absorber (Bidder shall refer to Note 01,02 in the typical drawing enclosed).The tie beams are located inside Absorber. These beams have to be used as Mist Eliminator support beams mandatorily and its location cannot be changed.

100-1731-001

DRAWING NO.

FOR TOLERANCES OF UNTOLERANCED
DIMENSIONS DURING MANUFACTURE
REFER PLANT STD. NO TP 023 0299

REFER NOTE 1 AND 2

REFER NOTE 1 AND 2

NOTES:-

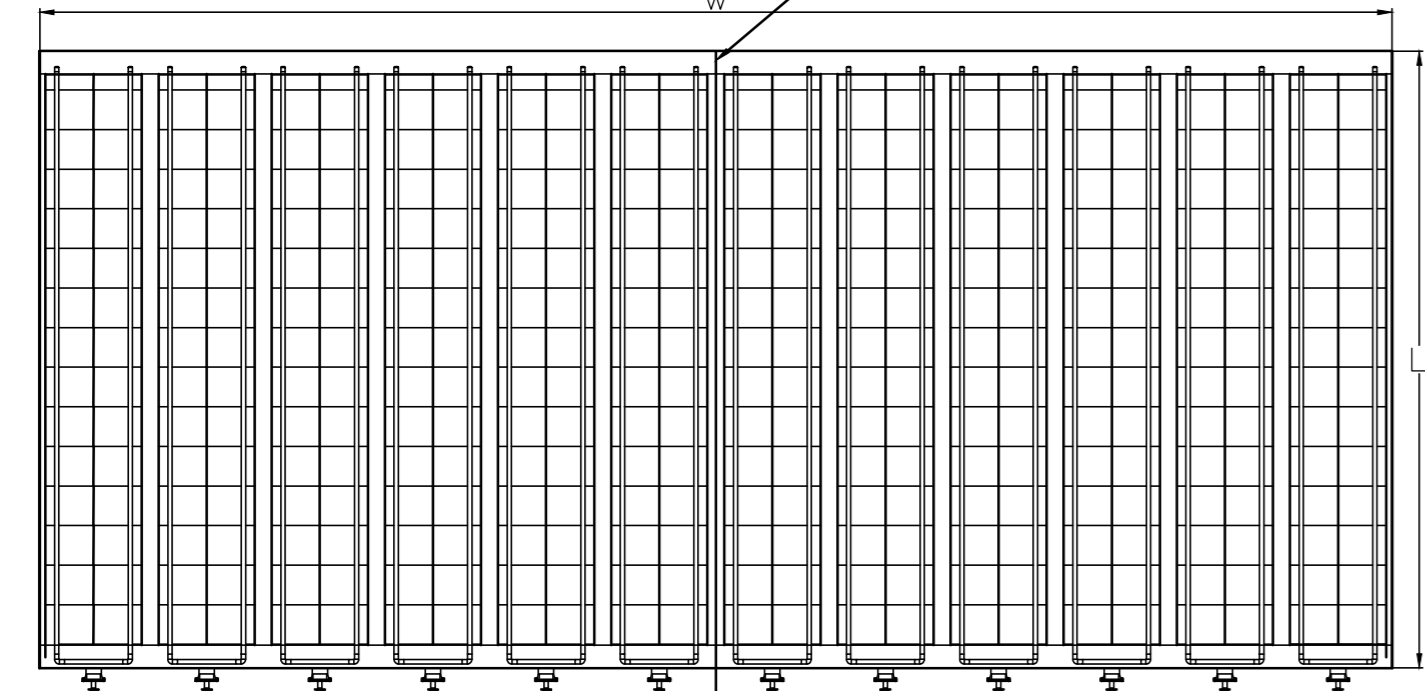
THIS DRAWING IS TO BE READ ALONG WITH "Technical Purchase
Specification for MIST ELIMINATOR FGD-ME: 1731

1. WHEN (WIDTH) W <= 22.9 M , CENTRAL BEAM AT "W/2 LOCATION" IS MANDATORY AND ITS LOCATION CANNOT BE DISTURBED TO ACCOMMODATE M/E (MIST ELIMINATOR).
2. WHEN W>22.9 M CENTRAL BEAM IS NOT APPLICABLE, INSTEAD THERE WILL BE TWO BEAMS ONE ON EITHER SIDE AT A DISTANCE OF 4 TO 5M AWAY FROM THE CENTRE LINE , THESE TWO BEAMS ARE MANDATORY AND ITS LOCATION CANNOT BE DISTURBED TO ACCOMMODATE M/E. EXACT LOCATION OF BEAMS WILL BE INFORMED DURING DETAILED ENGINEERING.
3. M/E SUPPORT BEAM ARE IN BHEL SCOPE AND DETAILS ARE GIVEN. ONLY THE DEPTH OF THE SUPPORT BEAM WILL BE VARIED AS PER THE LOADING DETAILS. VENDOR'S M/E DESIGN SHALL BE ABLE TO ACHIEVE THE WALKWAY REQUIREMENT OF 300 MM WIDE CONSIDERING THE BEAM DETAILS GIVEN IN THE DRAWING. THE WIDTH OF THE M/E BEAM CANNOT BE MODIFIED AND ANY ADDITIONAL SUPPORT REQUIRED TO ACHIEVE WALKWAY OF 300 MM HAS TO BE PROVIDED BY VENDOR.
4. BHEL'S SCOPE IS M/E SUPPORT BEAM AND THE OUTER RING SUPPORT. THE MAXIMUM WIDTH OF THE SUPPORT RING SHALL BE 300 MM. ANY OTHER ITEMS LIKE ENCLOSURE PLATES/BLANKING PLATES ,IF REQUIRED, SHALL BE IN THE SCOPE OF M/E VENDOR. ESCAPE OF GAS BYPASSING MIST ELIMINATOR IS NOT PERMITTED.
5. THE FOLLOWING ITEMS ARE IN VENDOR SCOPE:
 - a)MIST ELIMINATOR MODULE WITH END STOPPER PLATE FOR ALL THE STAGES
 - b)FLUSHING PIPES WITH SPRAY NOZZLES AND FLANGE FOR THE FRONT AND BACK WASH FOR ALL THE STAGES
 - c)HORIZONTAL MEMBER FOR PIPE SUPPORT WITH MOUNTING CLAMP FOR PIPE
 - d)VERTICAL MEMBER (LEG SUPPORT- L ANGLE) FROM THE MAIN BEAM TO HORIZONTAL PIPE SUPPORT
 - e)INVERTED U-CLAMP (HANGER TYPE) FOR MOUNTING BOTTOM WASH PIPE SUPPORT
 - f)PAD PLATE AT THE END OF THE LEG SUPPORT
 - g)ALL FASTENERS (MADE OF C-276) FOR SUPPORT MEMBERS/LOAD BEARING MEMBER INSIDE ABSORBER
 - h)FASTENERS/GASKETS FOR THE FLANGES OUTSIDE ABSORBER AS PER THE DRAWING
 - i) ANY BLANKING PLATE, IF REQUIRED, SHALL BE PROVIDED
6. BHEL WILL PROVIDE ONLY THE MAIN SUPPORT BEAM AND OUTER RING SUPPORT FOR THE MIST ELIMINATOR. ALL SUPPORTS FOR PIPE SHALL BE TAKEN FROM THE MAIN SUPPORT BEAM /OUTER RING .
7. PIPE SUPPORTS SHALL NOT BE TAKEN FROM ABSORBER CASING.
8. 1st STAGE MAY BE WITH ROOF TYPE/FLAT.2nd & 3rd STAGE HAS TO BE DIAMOND(AS PER DRAWING).
9. NOZZLE LOCATION ON 'W' SIDE ONLY.

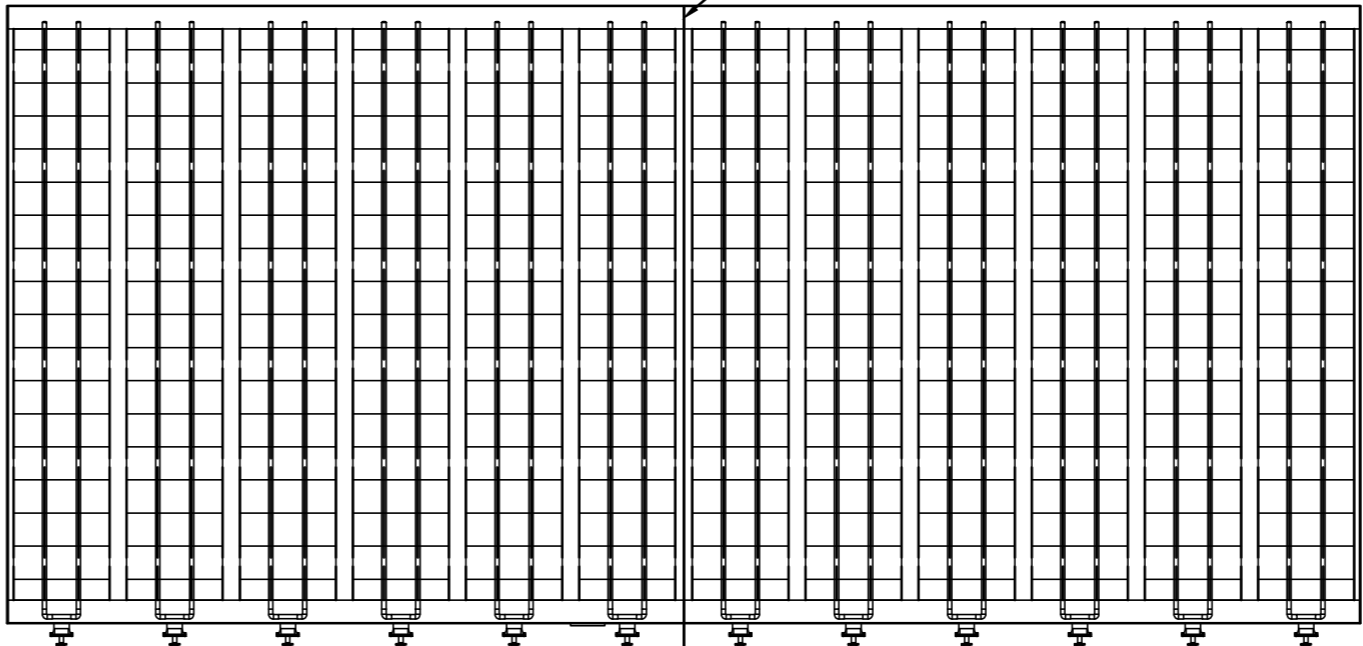
ABBREVIATIONS

M/E--MIST ELIMINATOR

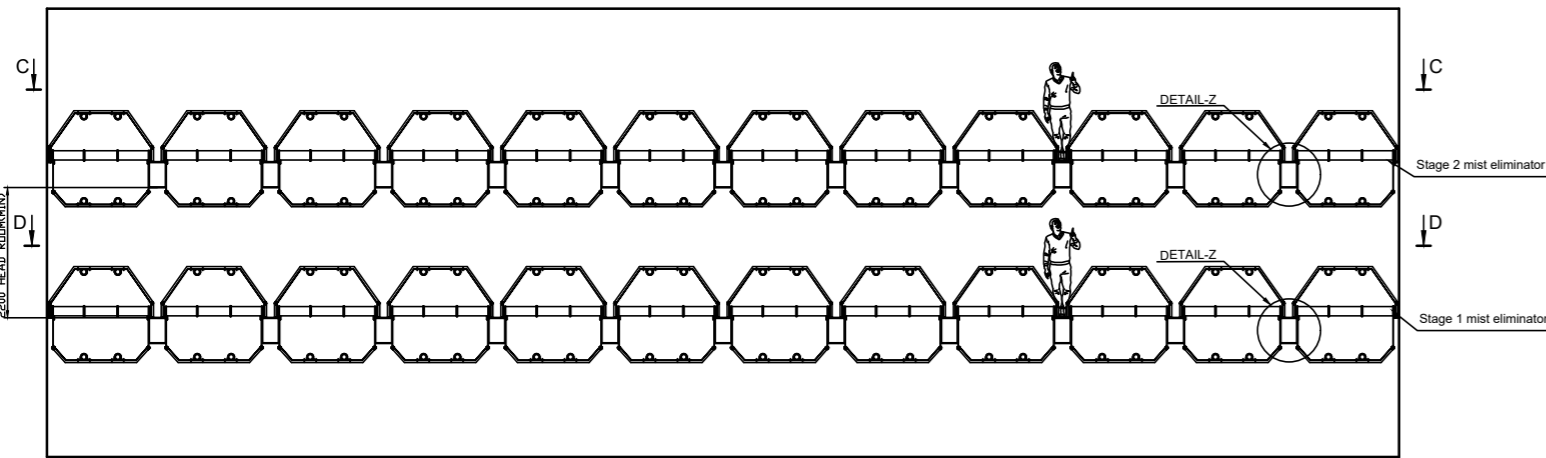
W---WIDTH



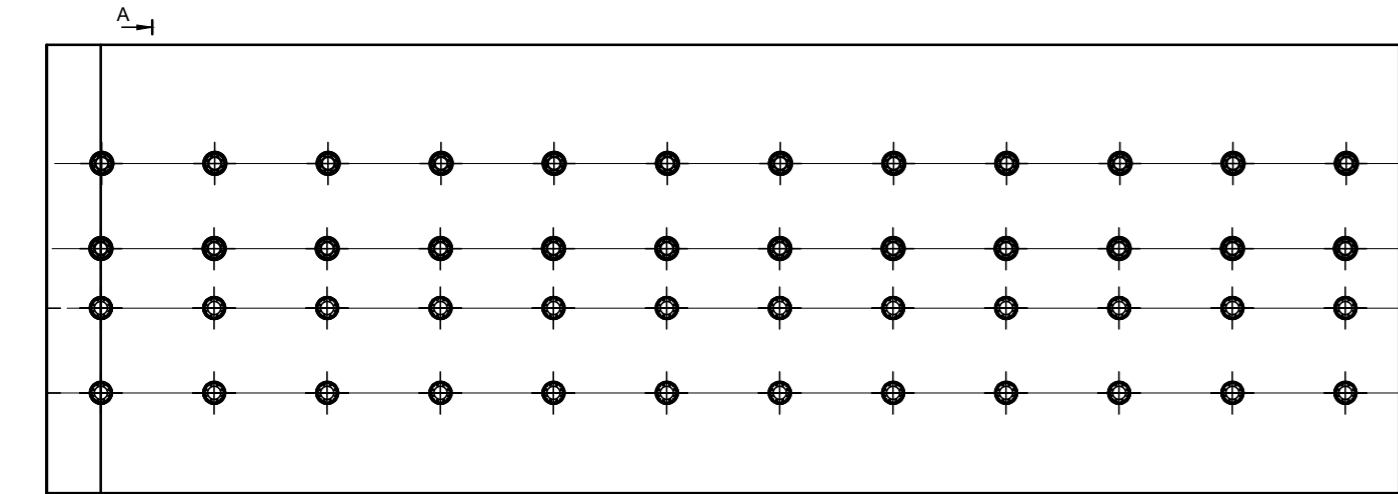
SECTION "C-C"



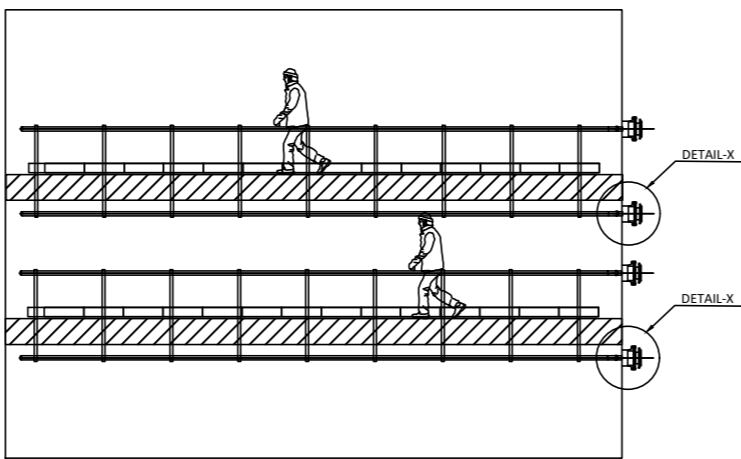
SECTION "D-D"



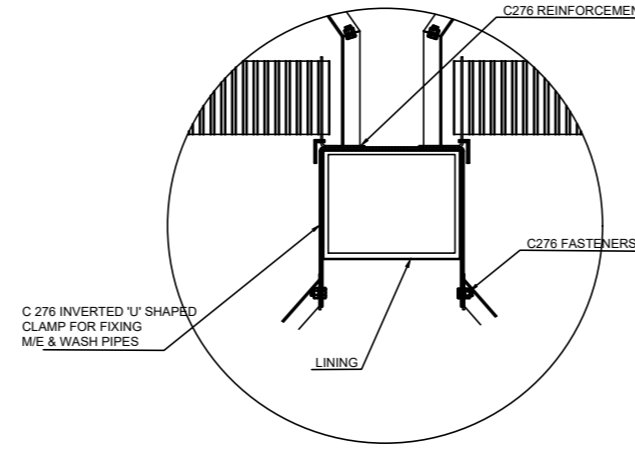
SECTION "B-B"



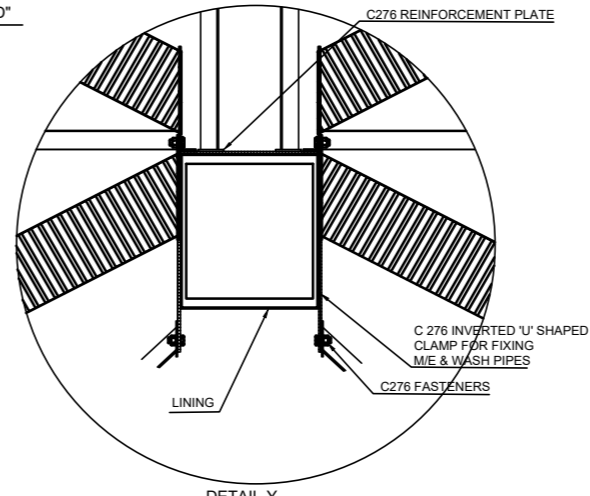
ABSORBER ELEVATION VIEW AT M/E LEVEL



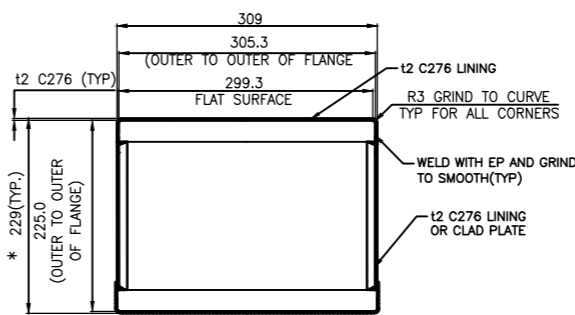
SECTION "A-A"



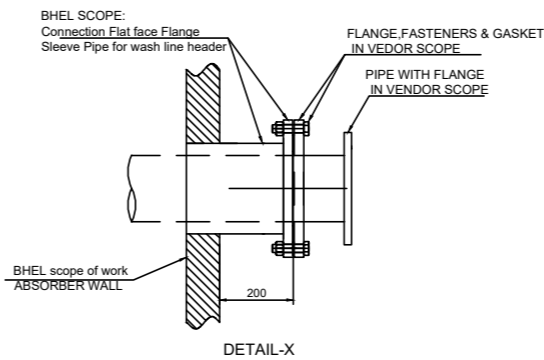
DETAIL-Z



DETAIL-Y



* HEIGHT OF THE SECTION WILL VARY DEPENDS UPON LOAD
TYPICAL ME SUPPORT BEAMS



DETAIL-X

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		DRN		NAME	SIGNATURE	DATE
Bharat Heavy Electricals Ltd		CHD		TRAJANAPALLI		10-05-2023
UNIT: HIGH PRESSURE BOILER PLANT		APPD		H BHARAT		10-05-2023
TIRUCHIRAPALLI - 620014		DEPT		REF TO ASSY / OLD DWG		
355-053		PP		WEIGHT (Kg)		
ALL DIMENSIONS ARE IN MM		PROJECTION		SCALE		NA
CODE		121		NTS		
TITLE		TYPICAL ARRANGEMENT OF MIST ELIMINATOR				
DRAWING NO :		ME-1731-001				
REV		00				

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issued and is not to be used in any
other way without the written
consent of the company.

REV 01 DATE ALTERED :
ZONE CHD & APPD :

BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPPALLI-620014

Pressure Parts/PE(FB)



Technical Purchase Specification for

MIST ELIMINATOR

Specification No.: **FGD:ME: 8216**

Revision No.: 01

END CUSTOMER: North Chennai TPS 1X800 MW FGD

BHEL CUSTOMER NO: 8216

01	18-12-2023	3.0	PQR modified to include State utilities and PSU's
00	04-10-2023		Fresh release.
Rev No.	Rev. Date	Clause	Description

	Name	Signature	Date
Prepared & Checked	T.RAJAGOPALAN		18-12-2023
Approved	N NIRMAL RAJ		18-12-2023

This document is meant for the exclusive purpose of bidding against this specification and shall not be transferred, reproduced or otherwise used for purposes other than that for which it is specifically issued.



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(separate file)



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1.0 APPLICABLE CODES & REGULATIONS

The design and materials shall conform to the requirements of applicable codes and regulations of the latest edition. The design, manufacture, installation and testing of the Mist Eliminator shall follow the latest applicable Indian/International (AISI / ASME/EN/Japanese) Standards.

2.0 INTENT OF SPECIFICATION

This specification covers the minimum requirements for the complete design, material, manufacturing, shop inspection, testing at the manufacturer's works, supervision of erection & commissioning and performance testing of Mist Eliminators along with accessories which is to be furnished in the Flue Gas Desulphurization plant of Coal fired Power Plants. The following points may be noted.

- a. Bidder shall assume full unit responsibility for the entire equipment assembly and make all possible efforts to comply strictly with the requirements of this specification and other specifications/attachments to inquiry/order.
- b. In case, deviations are considered essential by the Bidder (after exhausting all possible efforts), the same shall be separately listed in the Bidder's proposal under separate section, titled as "List of Deviations/Exceptions to the Enquiry Document (**Annexure-IV**)". In case of NIL deviation, bidder has to specify "NIL Deviation" in Annexure-IV. Any deviation, not listed under **Annexure-IV**, even if reflected in any other portion of the proposal, shall not be considered applicable.
- c. No deviation or exception shall be permitted without the written approval of the purchaser.
- d. Compliance to this specification shall not relieve the Bidder of the responsibility of furnishing equipment and accessories/auxiliaries of proper design, materials and workmanship to meet the specified start up and operating conditions.
- e. In case, the Bidder considers requirement of additional instrumentation, controls, safety devices and any other accessories/auxiliaries essential for safe and satisfactory operation of the equipment, the same shall be recommended along with reasons in a separate section and include the same in scope of supply.
- f. All accessories, items of work, though not indicated but required to make the system complete for its safe, efficient, reliable and trouble free operation and maintenance shall also be in supplier's scope unless specifically excluded.
- g. Bidder's equipment shall be designed for and shall meet the service, performance and minimum level of quality requirements specified. Bidder shall be solely responsible for advising End customer in writing of any conflicts between the specifications and Bidder's design, including performance and levels of quality. Bidder agrees that its obligations, liabilities and warranties shall not be diminished or extinguished due to its meeting the requirements of the Specification.



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3.0 PROVENNESS CRITERIA:

“Bidder should have previous experience of design, manufacture, supply, erection and commissioning / supervised erection & commissioning of the Mist Eliminators for Wet Limestone based FGD system for at least one (1) no. 500 MW or higher capacity pulverized coal fired power plant such that respective equipment(s) should have been in successful operation for a period not less than One (1) year prior to Part-I (Techno-commercial) bid opening date”. Necessary document evidences (Unpriced PO copy/ GAD or Datasheet for the reference plant/Performance certificate from end user for the reference plant) for qualification shall be submitted along with the bid.

(or)

“Bidder should have obtained confirmed Order for design, manufacture, supply, erection and commissioning / supervised erection & commissioning of the Mist Eliminators for Wet Limestone based FGD system for at least one (1) no. 500 MW or higher capacity pulverized coal fired power plant prior to Part-I (Techno-commercial) bid opening date for State power utilities or PSU's, in India”. Necessary documentary evidences (in form of Unpriced PO copy and approved Data sheet, General arrangement Drawing) shall be submitted along with the bid.

The Bidder shall offer only proven design which meets the Provenness criteria indicated above. If bidder doesn't meet the specified provenness criteria, their offer is liable for rejection.

4.0 SCOPE OF SUPPLY

Scope for the bidders shall include Design, Supply, Testing and Supervision of Erection & Commissioning.

Design: Includes basic engineering, detail engineering, preparation and submission of engineering drawings/calculations/datasheets/quality assurance documents / field quality plans, storage instructions, commissioning procedures, operation & maintenance manuals, performance guarantee test procedures and assisting BHEL in obtaining time bound approval from END CUSTOMER.

The following items shall be Bidder's scope of design

- Performance Calculation
- Basic Design
- Detailed Fabrication Drawings
- Support Beam Drawing and Loading data for Absorber Design
- Strength Calculation
- Documents for Fabrication, Inspection, Installation, Shipment and Erection & Maintenance works at site.

Supply: Includes manufacturing/fabrication, shop floor testing, stage inspections, final inspections, painting & packing.

Supervision of Erection & commissioning: Includes supervision of erection & Commissioning at site.

Performance testing: Includes outlet Mist Concentration measurement at site as per VDI Norm.



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Supplier's scope shall cover complete Mist Eliminator unit including sub-systems, start-up spares and special tools (typically) as given below. The scope of supply for Mist Eliminators shall include but not limited to the following:

i.	Mist Eliminator modules/panels with end stopper plate for all the stages.
ii.	Flushing pipes with spray nozzles and flange for the front and back wash for all the stages.
iii.	Horizontal member for pipe support with mounting clamps for pipe.
iv.	Vertical member (Leg support- L angle) from the main beam to horizontal pipe support
v.	Inverted U-Clamp (Hanger type) for mounting bottom wash pipe support.
vi.	Pad Plate at the end of the leg support
vii.	All fasteners required for pipe support members , Mist Eliminator panels, etc.
viii.	Fasteners (made of Galvanised steel) and gaskets for the flanges outside absorber as per the drawing
ix.	Any blanking plate, if required, shall be provided by bidder.
x.	3% of Hardware and gaskets supplied shall be provided as erection spares. Any other erection/commissioning spares deemed necessary by the vendor shall be supplied
xi.	Startup Spares as applicable
xii.	Special tools & tackles as applicable
xiii.	Mandatory spares as per requirement
xiv.	Painting and Rust Prevention during shipment and construction
xv.	Export packing and Inland Transportation
xvi.	Supervision of Erection & commissioning at site
xvii.	Residual droplet content measurement at site using VDI Norm 3679.
xviii.	Installation, operation and maintenance manuals
xix.	Any other items required for completeness of the equipment except the items covered in the exclusions.

Bidder shall refer to the drawing enclosed with this specification. Buyer will provide the details of the structures inside/outside absorber after placement of order and Mist Eliminator system shall be designed suitably considering the structures.



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4.1 DESIGN AND CONSTRUCTION FEATURES	
1.	To separate the entrained droplets, mist eliminators are installed above the absorber spraying zone. Mist Eliminators offered shall be designed, installed, tested and operated so that high availability and high droplet removal efficiency is guaranteed. The residual droplet content shall be measured according to applicable clauses in VDI Norm 3679.
2.	Material grade for Mist Eliminator chosen by the bidder shall be field proven in previous installation for the corrosive and erosive condition prevailing inside FGD absorber. The Material grade and Number of stages of ME shall be as per Annexure "Selection parameter for Mist Eliminator". The equipment shall be designed to withstand the corrosive and moist environment in which these are proposed to operate.
3.	Provision shall be made for continuous washing of both ends of all the stages except the back wash of the last stage. Wash water arrangement shall also be provided at the back end of the last stage of Mist Eliminators and it is meant for maintenance or during shutdown condition (i.e. back wash of the last stage is designed for intermittent washing).
4.	The Mist Eliminator washing system shall be designed for cyclic washing of different sections. Pneumatically operated valves required for cyclic washing, Platforms for accessing the automatic valves for the spray system will be provided by the buyer.
5.	Entrained Slurry shall be collected by Mist Eliminators downstream of the slurry spray system to avoid carryover of slurry to the Stack.
6.	The ME system shall be equipped with washing and drain provisions, where drains are directed into the absorber. Washing provisions shall include external and internal piping systems with replaceable nozzles, complete with all piping.
7.	The Material of construction for the Mist Eliminator Wash Pipe header shall be as per "Annexure-Selection parameters for Mist Eliminator". The material chosen by the bidder shall be proven and Mist Eliminator vendor shall have experience for the same
8.	Ease of replace-ability and placement of the mist eliminator on maintenance platforms is an important requirement. The ME shall be constructed in individual cells. The design shall safely avoid ME vibration and/or humming. The individual cells shall be sized so that no more than two maintenance personnel are needed to handle them manually when they are fully scaled or plugged, and the cells shall be capable of passing through the access doors for the mist elimination section.
9.	The ME shall be designed to allow for efficient cleaning in process. The mist eliminator system shall be capable of withstanding high velocity spray water jets typically employed during manual cleanings.
10.	Test port openings in absorber wall will be provided by the buyer in the downstream of the mist eliminator to enable performance testing. Test port location shall be recommended by the Mist Eliminator vendor and shall be as per ASME PTC-40.
11.	Easy access for placement and replacement of the mist eliminator shall be incorporated in the design of the mist eliminator arrangement and the absorber vessel. Vendor shall provide recommendations for the same.



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12.	Walkways will be provided by the Buyer. However, Size and location of Manholes which are required for installation and replacement of each segment of the Mist Eliminator shall be recommended by the Mist Eliminator vendor.
13.	The headroom shall have a height of more than 2200 mm. Spray pipe level from Mist eliminator shall be less than 700mm.
14.	The mist eliminator support beams shall be designed to act as maintenance walkways approximately 300 mm wide and shall allow for a minimum 500 Kg/m ² load. The support beam/walkways shall provide personnel access to all mist eliminator modules, wash headers and wash nozzles. The support beam will be provided by the buyer. However, bidder shall ensure the design of ME system in such a way that there is place to walk on the beam.
15.	Adequate number of viewing ports with flushing devices connected to automatically operating washing system will be provided by the buyer at following locations: (i) Upstream of 1st stage (ii) Between 1st and 2nd stage (iii) Downstream of 2nd stage. (iv) Downstream of 3rd stage (in case of Three stage ME) Regular flushing will be done in a defined time sequence. Viewing ports locations shall be recommended by the ME vendor.
16.	Internal supports for mist eliminator sections, etc. shall be designed to withstand the flooded weight of the supported section.
17.	All internal piping support members for mist eliminator and flushing system shall be provided as per Annexure" Selection parameter for Mist Eliminator".
18.	The material used for washing nozzles shall be field proven in previous installations.
19.	All fasteners provided for the ME and wash pipe supports shall be as per Annexure" Selection parameter for Mist Eliminator".
20.	The Mist eliminators and its supporting structure shall be designed to carry sufficient load during maintenance.
21.	The formation of agglomeration, deposition & caking shall be avoided. For mist eliminators the bidder shall submit a cleaning procedure including the required safety measures as part of the inspection concept.
22.	Detailed washing procedure for the mist eliminator shall be submitted such as <ul style="list-style-type: none"> • Minimum washing water pressure (MPa) • Minimum Flow rate (m³/hr) • Washing time schedule and sequence • Nozzle type • No of spray nozzles • Size of header pipes • Valve list
23.	Mist Eliminator Panel's support shall be designed in consideration of dirty condition of the Mist Eliminator. Design Load of the Mist Eliminator shall be Mist Eliminator's weight including eliminated liquid weight, clogging and max. allowable pressure drop of the mist eliminator. Blade surface shall be capable of supporting 225 kg of concentrated load, as might be experienced during inspection, while fully plugged with solids.



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24.	The thickness of the Mist Eliminator blades shall be as per vendor's proven practice. Vendor shall specify the thickness in their offer.
25.	The spacers to link each panel for restricting the gap between the panels shall be supplied. Provide anchors, Fasteners, spacers and supports shall be provided by bidder to securely hold Mist Eliminator and prevent shifting during operation
26.	The beam and the outer ring for supporting the Mist Eliminator will be provided by the buyer. All other supports for Wash Pipes shall be taken from the main beam or outer ring supports. Pipe support shall not be taken from Absorber Casing and such arrangements involving support from the casing will not be accepted.
27.	Any gap between absorber wall/Outer ring and mist eliminator should be closed with suitable material to avoid gas escaping Mist Eliminator. The material shall be supplied by bidder.
28.	All the headers shall be of same size. Flow rate shall be uniform over entire washing cycle i.e wash water shall be provided at fixed flow rate.

5.0 GENERAL REQUIREMENTS:

1.	Descriptions in the drawings, in the documents, and in the displays shall be in English
2.	Suitable drain connections shall be provided.
3.	The equipment shall be suitable for stable continuous operation.
4.	Limit of connection: The buyer has an intention to minimize interface for utilities as much as possible. The bidder shall consider this requirement in the planning stage of layout for the equipment. The bidder shall provide the header piping for utilities and branch piping to each nozzle. Terminal points for all utilities shall be located at Absorber wall edge at Mist Eliminator elevation. The bidder shall specify all terminal points with tie-in number in the P&ID and submit it in the proposal to confirm the scope of supply. Refer attached drawing for more details. All interface points shall be bolted connections.
5.	Service life: Entire equipment except wearing parts shall be designed and fabricated for a minimum service life of 30 years of operation or 200,000 full load operating hours whichever is longer.
6.	Corrosion allowance: Corrosion allowance for entire equipment shall be in accordance with latest applicable international standard.
7.	Unless otherwise specified , flanges shall be in accordance with ANSI B16.5 Class 150
8.	Name plate: Nameplate shall be provided indicating the item number and service name. Name plates shall be of 304 Stainless steel plate and placed at a readily visible location. Nameplate of main equipment shall have enough information, which will be confirmed during engineering phase.



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9.	Unless otherwise specified, all equipment items where the weight exceeds 15 kg shall be provided with suitable lifting lugs, ears or ring bolts or tapped holes for lifting rings. Minimum shock factor for lifting lugs shall be minimum 2.0. The position of lifting lugs and reference dimension shall be shown on GA and/or outline drawings. NDT shall be conducted for lifting lugs. When any spreader bars are required for lifting and laydown, the bidder shall provide spreader bar with equipment.
10.	Equipment shall be fabricated as much as practical to minimize erection at the site.
11.	Washing headers support and its clamping arrangement along with fasteners shall be provided by the bidder.
12.	If the Mist eliminator is in the resonance condition or any vibration problems occur, the bidder shall solve the problems in a timely manner.
13.	Bidder shall provide the mating flanges with the necessary gaskets.
14.	All the surfaces of the carbon steel (if any) should be rust prevented before shipment for the period of at least 12 months for storage and construction.
15.	The list of all Bought out items with makes and country of origin to be mentioned along with offer to be submitted.
16.	Quality Plan to be submitted along with the offer.
17.	During entire period of the project, the bidders shall strictly follow and adhere to the guidelines for effective Health & Safety Management. Supply of safety gears/PPE for bidder's/bidder's sub vendor personnel deputed at site for Supervision of E&C, etc. shall be in bidder's scope.
18.	Cost towards the participation in discussions/meetings, providing technical assistance during technical discussions/meetings with customer for approval of drawing/documents etc. TA/DA, boarding and lodging to attend these meetings shall be borne by the bidder and shall be inclusive in supply portion.
19.	Material of construction for all equipment/components shall be subject to BHEL/END CUSTOMER/END CUSTOMER's consultant approval during detail engineering. Accordingly bidder shall consider MOC for all equipment/component as per best engineering practice, global standard and global references.
20.	Bidder to provide sub vendor list and Bidder shall strictly adhere to BHEL/END CUSTOMER approved vendor list.
21.	<p>The modalities of inspection (Stage, Final, In-process) shall be finalized during detail engineering after submission of quality assurance plan (QAP). It shall be reviewed by the END CUSTOMER/END CUSTOMER's consultant and BHEL. Bidder shall follow the procedures of inspection as per the approved QAP. Bidder has to submit the following documents along with inspection call and if any other documents required as per approved QAP.</p> <ul style="list-style-type: none"> - Raw material inspection certificate - Internal test reports



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	<ul style="list-style-type: none"> - Statutory certificates as required. - All inspection & testing shall be carried out based on the following documents: <ul style="list-style-type: none"> a. Relevant Standards b. Specifications c. Approved drawings d. Data Sheets e. Calibration certificate for all the measuring instruments f. Bidder should also coordinate in getting the MDCC's (Material Dispatch clearance certificate) and all types of IC's (Inspection Certificates) from the End customer/End customer's consultant along with BHEL.
22.	Any shim plates for erection of equipment / item at site shall be in the scope of bidder.
23.	During detail engineering, bidder to strictly adhere to BHEL/END CUSTOMER/END CUSTOMER's consultant drawing formats, document numbering, quality plan & FQP formats
24.	The identification and numbering of equipment, systems, items, etc. of supply, as well as of all documents and drawings shall be in accordance with the VGB guideline RDS-PP (Reference Designation System for Power Plants - KKS system).
25.	Complete detail engineering drawings, calculations, selection of components etc. shall be reviewed & subject to approval of BHEL/END CUSTOMER/END CUSTOMER's consultant during detail engineering
26.	Bidder shall furnish necessary inputs & drawings of all equipment in editable Auto CAD/ MS-Word /Excel format.
27.	During detail engineering, successful bidder shall ensure flow of drawings/documents as per schedule. Any comments from BHEL/END CUSTOMER/END CUSTOMER's consultant should be addressed timely by the bidder.
28.	Bidder to note that list above is not exhaustive and any work /items required for completing the smooth operation and ensuring satisfactory running of the machines till final hand over to the end user shall also be in the scope of the bidder.
29.	<p>Bidder shall submit the signed and stamped copy of all the pages which constitutes this technical enquiry specification signed by authorized signatory and clearly mentioning each clause under following two categories to avoid any ambiguity in scope understanding & the scope division along with technical offer.</p> <ul style="list-style-type: none"> a. "Accepted without deviation and considered in scope of work" b. "Not considered in scope of work".



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6.0	PACKING AND FORWARDING
1.	<p>Proper packing to be ensured.</p> <p>Indigenous Supply: The equipment shall be wrapped in polythene bags & packed in a strong rigid wooden crate. Rain water should not enter into the equipment during storage in the outer yard of power plant.</p> <p>Imported Supply: All imported supply (supplies from outside India) should be packed as per Sea worthy packing specification no. PE-TS-888-100-A001. All imported items should have Sea worthy packing. Liberal packing materials and struts shall be provided to arrest rolling and to protect from transit damages</p>
2.	Cardboard containers shall be enclosed in a solid wooden container
3.	Equipment and process materials shall be packed and semi-knocked down, to the extent possible, to facilitate handling and storage and to protect bearings and other machine surfaces from oxidation. Each container, box, crate or bundle shall be reinforced with steel strapping in such a manner that breaking of one strap will not cause complete failure of packaging. The packing shall be of best standard to withstand rough handling and to provide suitable protection from tropical weather while in transit and while awaiting erection at the site.
4.	Equipment and materials in wooden cases or crates shall be properly cushioned to withstand the abuse of handling, transportation and storage. Packing shall include preservatives suitable to tropical conditions. All machine surfaces and bearings shall be coated with oxidation preventive compounds. All parts subject to damage when in contact with water shall be coated with suitable grease and wrapped in heavy asphalt or tar impregnated paper.
5.	Crates and packing material used for shipping will become the property of owner.(END CUSTOMER)
6.	Packing (tare) shall be part of the equipment cost and shall not be subject to return. The packing should ensure integrity and cohesiveness of each delivery batch of equipment during transportation. In case of equipment assemblies and unit's delivery in the packing of glass, plastics or paper the specification of packing with the material and weight characteristics are to be indicated.
7.	<p>Each package should have the following inscriptions and signs stenciled with an indelible ink legibly and clearly:</p> <ol style="list-style-type: none"> Destination Package Number Gross and Net Weight Dimensions Lifting places Handling marks and the following delivery marking
8.	<p>Each package or shipping units shall be clearly marked or stenciled on at least two sides as follows. BHEL SITE OFFICE,</p> <p style="text-align: center;">“ADDRESS OF THE PROJECT SITE AS PER ENQUIRY/ PO ”</p> <p style="text-align: center;">INDIA</p>



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	In addition, each package or shipping unit shall have the symbol painted in red on at least two sides of the package, covering one fourth of the area of the side.
9.	Each part of the equipment which is to be shipped as a separate piece or smaller parts packed within the same case shall be legibly marked to show the unit of which it is part, and match marked to show its relative position in the unit, to facilitate assembly in the field. Unit marks and match marks shall be made with steel stamps and with paint.
10.	Each case shall contain a packing list showing the detailed contents of the package. When any technical documents are supplied together with the shipment of materials no single package shall contain more than one set of such documents. Shipping papers shall clearly indicate in which packages the technical documents are contained.
11.	The case number shall be written in the form of a fraction, the numerator of which is the serial number of the case and the denominator the total number of case in which a complete unit of equipment is packed.
12.	Wherever necessary besides usual inscriptions the cases shall bear special indication such as "Top", "Do not turn over", "Care", "Keep Dry" etc. as well as indication of the center of gravity (with red vertical lines) and places for attaching slings (with chain marks)
13.	Marking for Safe handling: To ensure safe handling, packing case shall be marked to show the following: <ul style="list-style-type: none"> a. Upright position b. Sling position and center of Gravity position c. Storage category d. Fragile components (to be marked properly with a clear warning for safe handling
14.	Each crate or package is to contain a packing list in a waterproof envelope. All items are to be clearly marked for easy identification against the packing List. All cases, packages etc. are to be clearly marked on the outside to indicate the total weight where the weight is bearing and the correct position of the slings are to bear an identification mark relating them to the appropriate shipping documents. All stencil marks on the outside of cases are either to be made in waterproof material or protected by shellac or varnish to prevent obliteration in transit.
15.	The packing slip shall contain the following information: - Customer name, Name of the equipment, Purchase Order number with Date, Address of the delivery site, Name and Address of the Sender, Serial Number of Mist Eliminator & accessories, BHEL item Code, Gross Weight and Net weight of Supplied items.
16.	Prior to transport from manufacturer's work to destination, components of the unit shall be completely cleaned to remove any foreign particles. Flange faces and other machined surfaces shall be protected by an easily removable rust preventive coating followed by suitable wrapping.
17.	All necessary painting, corrosion protection & preservation measures shall be taken as specified in painting schedule. Supplier shall consider the coastal environment zone which is defined as "very severe" during final finishing/shipping.
18.	Successful bidder shall furnish the detail packing /shipment box details with information like packing box size, type of packing, weight of each consignment, sequence no. of



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	dispatch, no. of consignment for each deliverable item against each billing break up units/ billable blocks. Without these details the BBU shall not be approved during detail engineering. Also, complete billing break-up with above mentioned details shall be submitted within 10days of LOI.
19.	All items/equipment shall be dispatched in properly packed condition (i.e. no item shall be dispatched in loose condition such that it becomes difficult to store/identify its location at site at a later stage).
20.	Cases which cannot be marked as above shall have metal tags with the necessary markings on them. The metal tags shall be securely attached to the packages with strong steel binding wire. Each piece, Skid, Case or package shipped separately shall be labelled or tagged properly.
7.0	SUPERVISION OF ERECTION AND COMMISSIONING
1.	The erection of Mist Eliminator and washing system will be done by buyer as per Erection Manual and check List provided by the bidder. However, the bidder shall visit Mist Eliminator System/Absorber for the supervision of erection and commissioning.
2.	There will be one visit for each Mist Eliminator system or Absorber. Total No of Visit shall be as per Enquiry/PO. The bidder will be informed well in advance for the visit. No of days required supervision shall be as per enquiry/PO.
3.	TA/DA, Travel expenses, boarding and lodging shall be borne by the bidder and shall be inclusive in supervision portion.
8.0	DROPLET MEASUREMENT/PERFORMANCE TESTING AT SITE
1.	Bidder has to measure residual droplet at Mist eliminator outlet as per approved procedure for all the Mist Eliminators at site. The bidder will be informed well in advance for conducting the performance test (droplet measurement).
2.	Bidder has to complete the test for all the units as per enquiry/PO. TA/DA, travel expense, boarding and lodging, cost for bringing the testing kit to site shall be borne by the bidder and shall be included in the performance testing charges.
9.0	EXCLUSION
	The following work associated with the Mist Eliminator will be by BHEL: <ul style="list-style-type: none"> a. Mist Eliminator Wash Pumps b. Piping from ME Wash pumps to Absorber wall at Mist eliminator elevation. c. Pneumatic operated valves d. Support beams and outer ring inside the casing to support the ME e. Absorber casing and Nozzles.
10.0	INSPECTION AND TESTING
1.	Bidder shall furnish written copies of shop production, fabrication and quality test procedures and drawings for review by BHEL/END CUSTOMER prior to manufacture.



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	Inspection of above mentioned tests by BHEL representative at bidder's works is envisaged.
2.	The Bidder shall furnish performance test procedure along with measurement standard. The procedure will be reviewed and approved by the BHEL/END CUSTOMER.
3.	Final inspection and release by the BHEL/END CUSTOMER is a mandatory requirement unless specially waived.
4.	Acceptance tolerance of actual versus guaranteed performance for Droplet removal efficiency and Pressure drop shall be as per applicable standard.
5.	Mist Eliminator shall not be released for shipment, until shop tests data have been approved by BHEL/End Customer.
6.	Bidder should furnish performance guarantee as per applicable standard guarantee for the design, manufacture, material and safe operation of the equipment's.
7.	BHEL/END CUSTOMER shall witness the test at Bidder's works and a notice of minimum three (3) weeks shall be given for attending the inspection.
8.	Bidder to arrange all calibrated gauges, Instruments during inspection.
9.	Bidder to arrange Instruments and all accessories for the measurement at site as per applicable clauses VDI Norm 3679.
10.	The performance test & droplet measurement may be carried out at site for Guarantee conditions and shall be converted to the design condition.

11.0	SPARES, TOOLS & TACKLES
1	<p><u>START UP & COMMISSIONING SPARES</u></p> <p>Start-up & Commissioning Spares shall be part of the main supply of the Mist Eliminator & sub system.</p> <p>Start-up & commissioning spares are those spares which may be required during the start- up and commissioning of the equipment/system. The following startup/erection & commissioning spares shall be supplied by bidder along with main supply free of cost: All hardware's and gasket – 3%.</p> <p>In addition to the above, any other spares required for Start-up and commissioning deemed necessary by the bidder shall be supplied. The spares must be available at site before the equipment's are energized.</p>
2	<p><u>RECOMMENDED SPARES</u></p> <p>Bidders shall also furnish the Recommended spares list along with the offer required for 3 years of normal operation of the plant and should be should be independent of the list of the mandatory spares. Prices of recommended spares will not be used for evaluation of the bids. The price of these spares will remain valid up to 6 months after placement of Notification of Award for the main equipment.</p>
3	<p><u>MANDATORY SPARES:</u></p> <p>Bidder to quote for the mandatory spares as per enquiry/PO. Bidder shall quote for the "Mandatory spares", and it will be considered for L1 evaluation. Mandatory spare items</p>



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	<p>shall be handed over separately and shall not be mixed with the supply of the main equipment parts. Spares shall not be dispatched before dispatch of corresponding main equipment. The mandatory spares shall be clearly identifiable and suitable tagging shall be made by the bidder.</p> <p>All spares supplied under this contract shall be strictly inter-changeable with the parts for which they are intended for replacements. All the mandatory spares shall be manufactured as per same specification and quality plan of the main supply.</p> <p>Mandatory spares will be in percentage of main supply. However, while quoting, vendor to indicate quantity in numbers against percentage for each type. If derived quantity of mandatory spares is in fraction, then next higher side whole number has to be considered. In the event of ordering, PO will be released on rate per number basis, for the above firm quantity only.</p> <p>However, the price of Mandatory spare prices shall be kept valid for minimum 2 years from the date of dispatch of the of mandatory spares, to enable BHEL to place order further orders, if any, in case of additional requirement. The quantity of additional order may be less than or equal to the mandatory spares quantity indicated in the tender.</p>
4	<p><u>SPECIAL TOOLS & TACKLES:</u></p> <p>Any special tools & tackles required for the entire equipment to disassemble, assemble or maintain the units, they shall be included in the quotation and furnished as part of the initial supply. List of special tools & tackles shall be decided by bidder as per his proven practice. When special tools are provided, they shall be packaged in separate, boxes with lugs and marked as "Special Tools for (tag / item number)." Each tool shall be stamped or tagged to indicate its intended usage. Levers and eye bolts for the removal of parts to be serviced shall be submitted with special tools.</p>
12.0	DROPLET MEASUREMENT/PERFORMANCE TESTING AT SITE, PERFORMANCE GUARANTEE
1.	Bidder has to measure residual droplet at Mist eliminator outlet as per approved procedure for all the Mist Eliminators at site. The bidder will be informed well in advance for conducting the performance test (droplet measurement).
2.	Bidder has to complete the test for all the units as per enquiry/PO. TA/DA, travel expense, boarding and lodging, cost for bringing the testing kit to site shall be borne by the bidder and shall be included in the performance testing charges. All performance tests for Mist Eliminators shall be carried out in accordance with any latest international codes/standards.
3.	<p>The mist eliminator outlet droplet content shall be guaranteed as follows at absorber outlet measured over a period of 24 hrs continuous operation.</p> <ol style="list-style-type: none"> I. $\leq 20 \text{ mg/Nm}^3$ (in case of three stage Mist Eliminator) II. $\leq 50 \text{ mg/Nm}^3$ (in case of two stage Mist Eliminator)
4.	Mist outlet-droplet content shall be measured as per applicable clauses in VDI Norm 3679 and the Contractor shall carry out the tests as per the test procedure approved by the Employer.
5.	Bidder shall furnish Performance guarantee for the design, manufacture, material, safe and trouble-free operation of the Mist Eliminator and its accessories
6.	Maximum Pressure drop across M/E at Design Point condition (as per "Selection parameter for Mist Eliminator") is to be guaranteed. It shall be measured at Guarantee point conditions in site and shall be converted to the design condition.



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7.	The Bidder shall ensure a design of the equipment to achieve an average target availability of 98% for 120 days (continuous) and average target availability of 95% for 1 year
8.	In the event that the performance test is unsuccessful in meeting performance guarantees, bidder shall take necessary remedial action at his cost and the performance test shall be repeated.
13.0	WARRANTY:
1.	The Bidder shall warrant that the equipments/items shall be free from defects in the design, engineering, materials and workmanship of the Plant and Equipment supplied and of the work executed. The Warranty period shall be 24 months from the date of supply or 18 months from the date of commissioning, whichever first occurs. 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 Bidder, the Bidder shall promptly, in consultation and agreement with BHEL regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as the Bidder shall, at its discretion, determine) such defect as well as any damage to the Facilities caused by such defect.
2.	In case of failure of the equipment to meet the guarantee, END CUSTOMER/BHEL reserves the right to reject the equipment. However, END CUSTOMER/BHEL reserves the right to use the equipment until new equipment supplied by bidder meets the guaranteed requirement.
14.0	TRAINING
	Successful bidder shall provide comprehensive training for END CUSTOMER/BHEL Engineering, O&M, Erection & Commissioning staffs at site covering all aspects of the ME system - Operation & Maintenance, Troubleshooting, cleaning procedure etc.
15.0	DOCUMENTATION
	<p>List of Drawings or documents to be submitted after award of contract is enlisted. Drawings that are reviewed by the END CUSTOMER/ BHEL will be returned to bidder with a transmittal letter with any comments and / or questions marked on the drawings or noted in the letter. All comments and questions must be resolved before a resubmission of drawings / documents. If the design has not developed enough to resolve some of the comments or questions, bidder shall place a "hold" on those items or areas of design. END CUSTOMER/ BHEL reserves the right to return drawings unprocessed to bidder if there exists any evidence that bidder has not acknowledged all comments and questions.</p> <p>All necessary GA drawings, sections, sub-assembly drawings, specifications of main and sub components and necessary set of operation & maintenance manual as asked by END CUSTOMER must be furnished by bidder in soft and hard copy forms. For all documents softcopy format shall be searchable pdf, however in addition all drawings, diagrams like P&IDS shall be supplied in ACAD or other editable format and all lists in</p>



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Excel format. Further break up of technical documents will be discussed during finalization of the purchase contract.

Unless agreed otherwise, Ten (10) hard copies and five (05) sets of electronic copies of all documents are to be submitted in the English language. Electronic Copies shall be submitted in primary original data format (e.g. DOC, XLS, DWG) as well as in a printable non-proprietary document format (e.g. PDF). Especially P&IDs shall be submitted as DWG files and PDF files. Bidder to ensure submission of hard copies as per END CUSTOMER requirement for all engineering drg/doc and for all subsequent revisions along with a soft copy through email to concerned project team.

However all the engineering related information shall be furnished in soft form to BHEL.



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DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID

Sl. No.	Description
1.	Documents for meeting the Qualification Requirement
2.	Reference plant list (as per Annexure-I)
3.	Compliance to Specification – Duly signed and stamped by the bidder
4.	Data Sheet for Mist Eliminator(as per Annexure-II)
5.	General arrangement and the cross-sectional drawing of the Mist Eliminator & its accessories.
6.	Schedule of Guarantee (as per Annexure-III)
7.	Deviation list (as per Annexure-IV)
8.	Performance characteristic curves of Mist Eliminator
9.	Washing System data calculation sheet and Washing sequence
10.	Utility List & Required Pump Capacity
11.	Mandatory spares list.
12.	Start-up, Erection and commissioning spares list.
13.	Recommended Spares List for 3 Year's Normal Operation
14.	Proforma Packing List
15.	Approximate weight of each skid
16.	Support beam details and loading data
17.	Sub-Vendor List
18.	Scope of Supply
19.	Quality Plan
20.	List of Special Tools
21.	Delivery Schedule
22.	Droplet Measurement procedure
23.	WPS & PQR arrangement
24.	Man-holes, Viewing Ports, Sampling ports, measuring ports & Wash Pipe flange location & details
25.	Catalogue
26.	Terminal Point details
27.	Bill of Materials along with material and codes



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DOCUMENTS TO BE SUBMITTED AFTER AWARD OF CONTRACT

Sl. No.	Description	No of copies	Delivery Time
1.	General arrangement and the cross-sectional drawing of the Mist Eliminator & its accessories.	1	2 weeks after contract
2.	Isometric (3D) Drawing of the Mist Eliminator & it accessories	1	1 month after award
3.	Data Sheet for Mist Eliminator	1	2 weeks after contract
4.	Performance characteristic curves of Mist Eliminator	1	2 weeks after contract
5.	Washing system data calculation sheet, Washing sequence.	1	2 weeks after contract
6.	Utility List & Required Pump Capacity	1	2 weeks after contract
7.	Support beam drawing & loading data	2	2 weeks after contract
8.	Strength & performance Calculation	1	2 weeks after contract
9.	Mandatory spares list.	1	2 weeks after contract
10.	Erection and commissioning spares list.	1	2 weeks after contract
11.	Recommended Spares List for 3 Year's Normal Operation	1	2 weeks after contract
12.	Special tools list	1	2 months after contract
13.	Inspection and Test Procedure	1	1 month after contract
14.	Installation and assembly procedure	1	4 months after contract
15.	Quality Plan	4	1 month after contract
16.	Inspection & Test record	1	In 2 weeks after test
17.	Inspection Certificate	1	In 2 weeks after test
18.	Material Test Certificates	2	In 2 weeks after test
19.	Sub vendors List	1	2 weeks after contract
20.	Manufacturing Schedule	1	2 weeks after contract
21.	Progress report	1	Every month
22.	Proforma Packing List	1	2 months prior to shipping
23.	Approximate weight of each skid	1	2 months after contract
24.	Pre Commissioning Check List	2	4 months after contract
25.	Droplet Measurement procedure	2	1 month after contract
26.	WPS & PQR	2	2 weeks after contract
27.	Catalogue	2	2 weeks after contract
28.	Operation and Maintenance Manual Cleaning and repair procedure	• 10 hardcopies and 5 electronic copies in English	4 months after contract



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16.0 ANNEXURES

ANNEXURE – I

a) REFERENCE LIST as per format shown below. (at least One (1) reference plant details)

S. No.	Project Name , Customer & Plant capacity	Coal fired Yes/No	Wet Limestone Based FGD Yes/No	Model	Flue gas flow Nm ³ /hr	Size	Outlet Mist Concentration mg/Nm ³	Commissioned date	Qty

NOTE: Necessary document as mentioned in CL3.0 Provenness criteria to be submitted.

SIGNATURE OF BIDDER _____

NAME _____

DESIGNATION _____



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ANNEXURE – II- TECHNICAL DATA SHEET

Enquiry No: _____

Project: _____

Sl. No	Description	Data			
1.0	GENERAL				
	a. Buyer	:	BHEL-HPBP Trichy		
	b. Project	:			
	c. End Customer	:			
	d. Location	:			
	e. Service	:	Continuous		
	f. Installation	:	In-door		
	g. Total number of Mist Eliminators and Accessories (No of sets)	:			
2.0	MANUFACTURER DETAILS				
	a. Model	:			
	b. Type	:			
	c. No of stages	:			
	d. Vane type for Coarse & Fine separators	:			
	e. Pitch details for Coarse & Fine separators	:			
	f. Weight data	:			
	g. Flushing system details	:			
	(i) Nozzle Details:		1 st stage	2 nd stage	3 rd stage (if applicable)
	Type of Nozzle				
	Spray angle				
	Size				
	Thread				
	Flow rate				
	Nominal size				
	(ii) No of nozzles for upstream wash				
	(iii) No of nozzles for downstream wash				
3.0	OPERATING CONDITION	:	“Shall be as per Selection parameters for Mist Eliminator”		
4.0	PERFORMANCE DATA				
	a. Face Velocity	m/s	:		
	b. Pressure Drop	hPa(G)	:		
	c. Limit Drop Size	Micron	:		
	d. Temperature resistance of ME System	Deg C	:	“Shall be as per Selection parameters for Mist Eliminator”	
	e. Performance curves		:	Bidder to Provide	



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	(i) Pressure Drop Vs Gas Velocity (ii) Outlet Mist Load vs Gas Velocity (iii) Limit Drop Size vs Gas Velocity (iv) Collection Efficiency vs Drop Size		
	f. Washing sequence & Valve List	:	Bidder shall submit the washing sequence with detailed write up
	g. Utility list & required Pump Capacity	:	Bidder to Provide
5.0	MATERIALS		
	a. ME Panel	:	
	b. Washing Pipe	:	
	c. Wash Pipe Supports	:	
	d. Washing Nozzles	:	
	e. Hardwares	:	

7.0 WASHING ARRANGEMENT

7.1	Washing water condition	
a.	Flow rate - Average	Bidder to provide
b.	Flow rate – Instantaneous Allowable Max	“Shall be as per Mist Eliminator Selection Parameters for the project”
c.	Feed Pressure (at inlet flange of ME Wash header)	“As per tender specification”
d.	Spray pipe level from ME Panel	< 700 mm

7.2	Washing Method						
		First Stage		Second Stage		Third stage (if applicable)	
		Front Surface	Back Surface	Front Surface	Back Surface	Front Surface	Back Surface
a.	Total Washing Area m ²						
b.	No of divided sections						
c.	Washing Water Source						
d.	Washing Water Average Flow rate m ³ /h	*	*	*	*	*	*
e.	Instantaneous Max Water Flow rate m ³ /h	*	*	*	*	*	*



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f.	Duration of One washing for One Divided Section Sec	*	*	*	*	*	*
g.	Time of One washing Cycle (min)	*	*	*	*	*	*
h.	* Bidder to fill the value						
i.	Note: Last/Final stage back surface washing - only for Maintenance						

SIGNATURE OF BIDDER -----

NAME -----

DESIGNATION -----



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ANNEXURE III- SCHEDULE OF GUARANTEES

Enquiry No: _____

Project: _____

Sl. No	Description	Data
1.	Mist eliminator outlet droplet content at absorber outlet measured over a period of 24 hrs continuous operation. (in case of three stage ME) * mg/Nm^3	: $\leq 20 \text{ mg/Nm}^3$
	Mist eliminator outlet droplet content at absorber outlet measured over a period of 24 hrs continuous operation. (in case of two stage ME) *	$\leq 50 \text{ mg/Nm}^3$
2.	Total Pressure drop across M/E at design point condition (in case of three stage ME) mmwc(G)	: $< 20 \text{ mm WC}$
	Total Pressure drop across M/E at design point condition (in case of two stage ME) mmwc(G)	$< 15 \text{ mm WC}$
3.	Equipment Availability (%) Equipment Availability for 120 days (continuous) Equipment Availability for 1 year %	: 98 % % (Bidder to Provide which shall be at least 95% or more)

*Strike off whichever is not applicable

SIGNATURE OF BIDDER _____

NAME _____

DESIGNATION _____



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ANNEXURE – IV- LIST OF DEVIATIONS/EXCEPTIONS TO THE ENQUIRY DOCUMENT

Enquiry No: _____

Project: _____

SI No	Clause No	Page No	Description of Deviation

Note: Enlarge the table to incorporate items. In case of NIL deviation, bidder has to specify “NIL Deviation”.

SIGNATURE OF BIDDER _____

NAME _____

DESIGNATION _____



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17. SELECTION PARAMETER FOR MIST ELIMINATOR

A. TECHNICAL INFORMATION

Sl. No.	Description	Requirement
1.	Type	Three stage chevron type. (First Stage shall be Flat or Roof Type, Second and Third stages shall be Diamond/Roof type) (Refer tender for details)
2.	Quantity	
i.	Quantity of Mist Eliminators	1 set for each unit 1 set means Complete Mist Eliminators, Washing systems and accessories
ii.	Mandatory Spares	Refer Contract Specification
3.	Material of construction of Mist Eliminator	
i.	ME Panel	Stainless steel or Polysulfone
ii.	Washing Pipe	The mist eliminator wash piping/header shall be constructed of rubber lined carbon steel or glass fiber reinforced plastics. Polypropylene or PVC is also acceptable for mist eliminator wash headers provided Contractor or its Collaborator has proven experience for the same.
iii.	Wash Pipe Supports	Alloy 59/C276
iv.	Washing Nozzles	PVDF or PP as per bidder's proven practice.
v.	Hardware inside absorber	a) Alloy 59/ C276 for load bearing applications b) All metallic fasteners provided shall be of Alloy 59/C276 c) For pipe clamps, C276 Bolt, C276 Nut, C276 washer and C276 spring washer to be provided
vi.	Blanking / Enclosure Plate	Same as that of ME Panel if it is part of Mist Eliminator (or) C276 material.
4.	Parameters	
i.	Gas flow	Vertical
ii.	Casing Dimension	Length: 9900 mm Width : 23900 mm
iii.	Design Pressure of Mist Eliminator Panel	660 mmH ₂ O (G)
iv.	Max Allowable Pressure drop across Mist Eliminator element	20 mmH ₂ O (G) at Design point 16 mmH ₂ O (G) at Guarantee point
v.	Design Temperature	<ul style="list-style-type: none"> • 70°C (Continuous) • 80 – 90°C (30 minutes) • 90 – 110°C (5 min)



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Sl. No.	Description	Requirement	
		Guarantee Point	Design Point
5.	Gas condition at ME Inlet		
i.	Gas Flow Rate (Nm ³ /s-wet)	724.1	795.5
ii.	Gas Flow Rate (m ³ /s-wet)	864.0	949.9
iii.	Gas Temperature (°C)	52.8	53.0
iv.	Density (kg/m ³)	1.075	1.074
v.	Operating Pressure at Mist Eliminator inlet (mm H ₂ O (G))	119	143
vi.	Gas Flow Distribution	± 10%	
6.	Gas Composition at ME Inlet		
i.	SO ₂ (Vol%-wet)	0.0022	0.0022
ii.	H ₂ O (Vol%-wet)	13.68	13.87
iii.	O ₂ (Vol%-wet)	4.52	4.42
iv.	CO ₂ (Vol%-wet)	11.97	12.03
v.	N ₂ (Vol%-wet)	69.83	69.69
vi.	HCl (ppm-Dry)	<3	<3
7.	HF (ppm-Dry)	<1	<1
i.	Dust (mg/Nm ³ -wet)	<50	<200
8.	Gypsum Slurry Density (kg/m ³)	1214	1219
9.	Entrained Mist Condition:		
i.	Mist Concentration at Inlet – at Guarantee & Design Point	200 g/Nm ³ -dry	
ii.	Mist Concentration at Outlet – at Guarantee & Design Point	≤20 mg/Nm ³ as per VDI Norm 3679	
10.	Mist Composition		
i.	Solid	30 wt.%	
ii.	Cl ⁻	20000 ppm	
iii.	Mg ²⁺	5750 ppm	
iv.	Ca ²⁺	2400 ppm	
v.	Na ⁺	1100 ppm	
vi.	SO ₄ ²⁻	3550 ppm	



Technical Purchase Specification for MIST ELIMINATOR

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B. WASHING ARRANGEMENT

I.	Washing water condition	
a.	Flow rate - Average	40.2 m ³ /hr #
b.	Flow rate at M/E Inlet – Instantaneous Allowable Max	120 m ³ /hr
c.	Flow rate at M/E Inlet – Instantaneous Min	100 m ³ /hr
d.	Feed Pressure (at inlet flange of ME Wash header)	0.2 MPa (Max)
e.	Spray Nozzle –Top washing	90°, Full Cone
f.	Spray Nozzle –Bottom washing	120°, Full Cone
g.	Spray pipe level from ME Panel	< 700 mm

II.	Washing Method						
		First Stage		Second Stage		Third Stage	
		Front Surface	Back Surface	Front Surface	Back Surface	Front Surface	Back Surface
a.	Total Washing Area m ²	9.9 x 23.9	9.9 x 23.9	9.9 x 23.9	9.9 x 23.9	9.9 x 23.9	9.9 x 23.9
b.	Washing Water Source	Refer Clause C					
c.	Washing Water Average Flow rate m ³ /hr.	*	*	*	*	*	**
d.	Instantaneous Max Water Flow rate m ³ /hr.	*	*	*	*	*	**
e.	Duration of One washing for One Divided Section Sec	*	*	*	*	*	**
f.	Time of One washing Cycle (min)	*	*	*	*	*	**
	* Washing method shall be confirmed by the vendor. ** Only for Maintenance # Shall be finalized by vendor						



Technical Purchase Specification for MIST ELIMINATOR

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C. WATER ANALYSIS

Analysis of water used for Mist Eliminator washing is provided below.

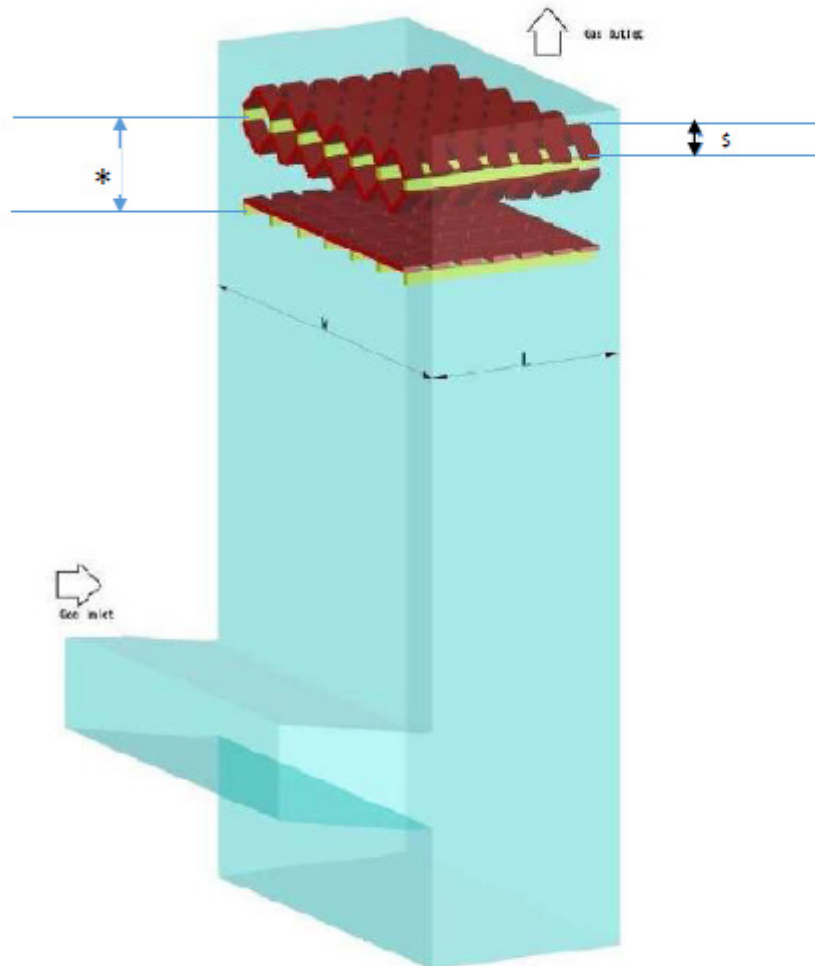
ANNEX- 1.3

SERVICE WATER ANALYSIS

The Service water (make-up water) water quality is mentioned below:

Sr. No.	Parameter	Unit	Result
1	Temperature	°C	35
2	pH	-	7.5 – 8.2
3	LSI		0 -0.2
4	Alkalinity		< 100 PPM of Ca CO ₃
5	Hardness		< 80 PPM
6	Chloride		< 350 PPM
7	Sodium		< 170 PPM

D. MIST ELIMINATOR ARRANGEMENT :



L (Length): 9,900 mm. W (Width): 23,900 mm

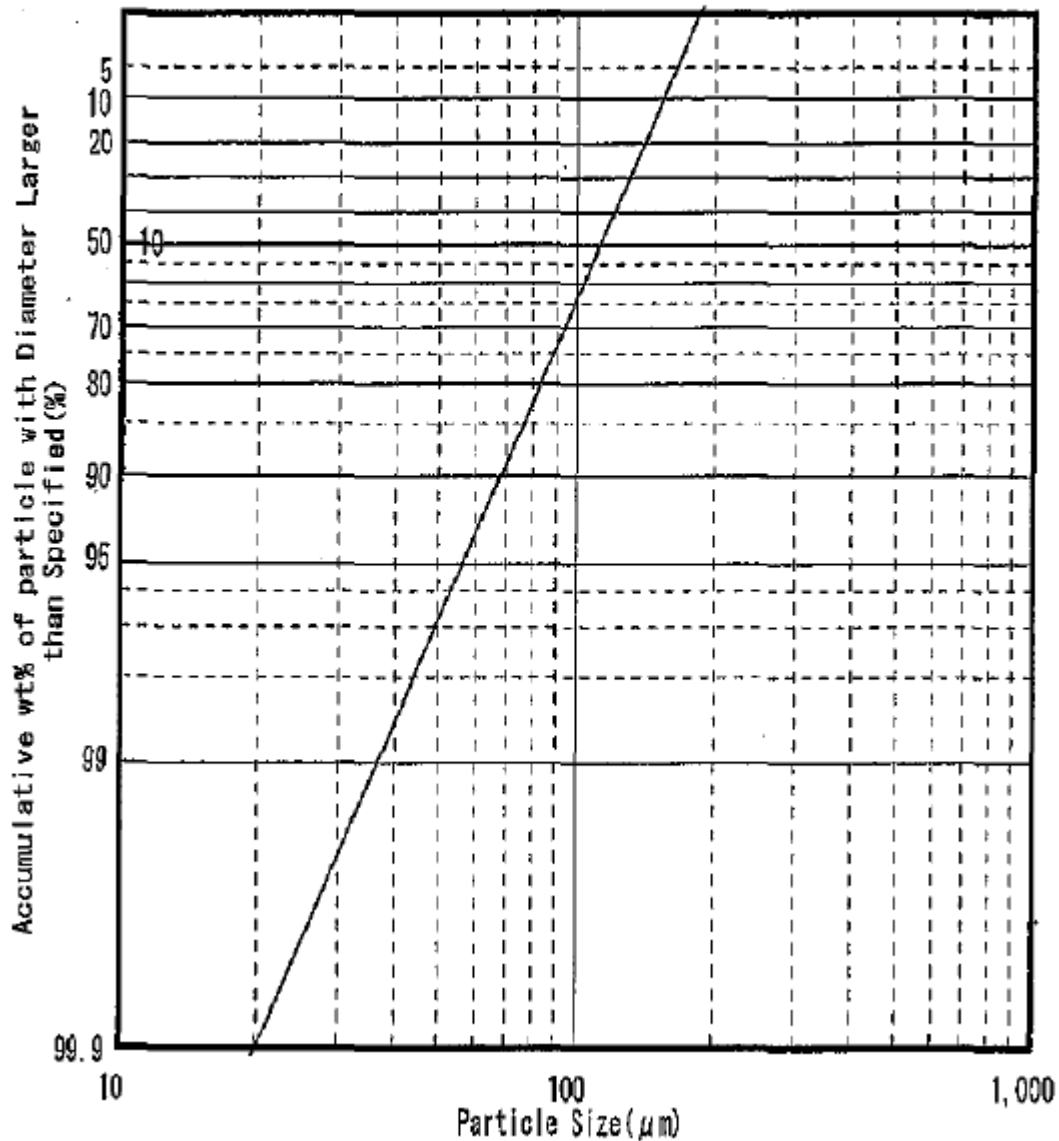
* The vertical distance between beam top to beam top shall not exceed 2600 mm.

\$ The vertical distance from beam top to mist eliminator tip shall not exceed 700 mm.

Note: Bidder to decide the spray washing arrangement considering the water flow rate mentioned above.

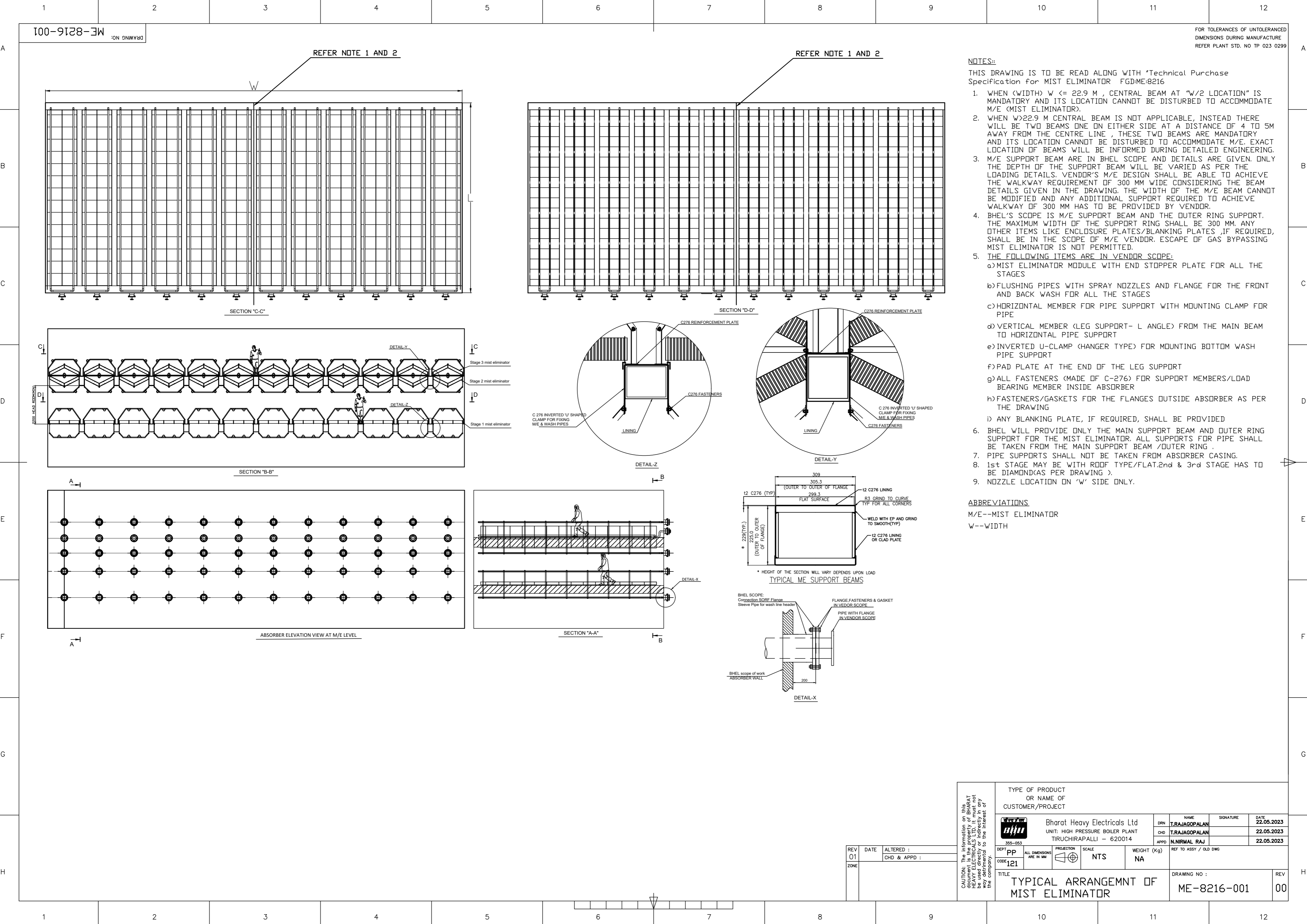
E. MIST PARTICLE SIZE DISTRIBUTION

Fig. 2 Mist Particle Size Distribution(EXPECTED VALUE)



F. Mandatory beam locations:

1. For North Chennai 800 MW, the size of the Absorber is 9900 mm Length X 23900 mm Width. The dimensions indicated are of absorber outer to outer dimension. Thickness of absorber wall will be 9mm all around. Bidder shall note that there are **TWO** column tie beam located at 4.5 Meter on either side to the center of the absorber (Bidder shall refer to Note 01,02 in the typical drawing enclosed).
2. The tie beams are located inside Absorber. These beams have to be used as Mist Eliminator support beams mandatorily and its location cannot be changed.





An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)
Tiruchirappalli-620 014, Tamil Nadu, India
Dept: MATERIALS MANAGEMENT/BOI

Annexure – A- Terms and Conditions

ACCEPTANCE OF TECHNO - COMMERCIAL TERMS AND CONDITIONS BY THE BIDDERS

Any deviation to the below mentioned terms shall be stated specifically in the comments column for each term and also in case of acceptance to our terms, it will be construed that the whole term is understood and agreed in totality without any deviation. (If otherwise mentioned).

BHEL Tender No. & Date		1802400030 dated 07.03.2024
Description of the Equipment:		Supply of ABSORBER MIST ELIMINATOR and Mandatory Spares, Supervision for E & C and Performance Testing
Projects		SAGARDIGHI (1731) and North Chennai (8216)
<i>To be filled by bidder</i>		
i)	VENDOR / FIRM NAME	
ii)	BHEL VENDOR CODE (If Any)	
iii)	QUOTATION REFERENCE & DATE	
iv)	CONTACT PERSON NAME	
v)	CONTACT PERSON MOBILE NO	
vi)	CONTACT PERSON MAIL ID	
vii)	FIRM MAIL ID	
viii)	WORKS ADDRESS & TELE NO	
ix)	OFFICE ADDRESS & TELE NO	
x)	PAN NO	
xi)	MSE VENDOR / NON- MSE VENDOR	

Sl. No	Terms and Conditions	Vendor's confirmation
A	<p><u>Preference to Make in India:</u></p> <p>For this procurement, the local content to categorize a supplier as a Class I local supplier/ Class II local Supplier/ Non- Local supplier and purchase preference to Class I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT.</p> <p>The local supplier at the time of tender, bidding or solicitation shall be required to provide self-certification that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made.</p> <p>If the quoted value is exceeding 10 crores, supplier shall submit along with Part-I bid 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.</p>	
B	<p>MSE VENDOR:</p> <p><i>i. If L1 vendor is an MSE vendor entire project package will be ordered on L1 vendor.</i></p> <p><i>ii. If a Non MSE vendor is coming as L1, then L1 prices will be counteroffered on MSE vendor who is quoting price within the price band L1+15% and if they are agreeing, purchase order will be awarded for full/complete supply of total tendered value to MSE.</i></p> <p><i>iii. Since the items are non-divisible, if more than one MSE vendors are available in the L1+15% price band then lowest of the MSE vendor will be selected for counteroffering. If lowest MSE vendor is not accepting it will be counteroffered to the next MSE vendor in the price band and so on.</i></p> <p><i>iv. Finally if none of the MSE vendor in the price band is accepting, it will be ordered on L1 non MSE vendor.</i></p> <p>Payment for MSE Indigenous vendors will be as per MSMED Act, 2006</p> <p>MSE suppliers can avail the intended benefits only if they submit along with the offer, attested/notarized copy of <i>Udyam Registration certificate</i>.</p> <p>Non submission of <i>Udyam Registration certificate</i> will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry, in case of any deficiency in the <i>Udyam Registration certificate</i>. If the tender is to be submitted through e-procurement portal, then the <i>Udyam Registration certificate</i> is to be uploaded on the portal.</p>	

C	<p>REVERSE AUCTION: <i>“BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among all the tdm techno-commercially qualified bidders.</i></p> <p><i>Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.”</i></p>	
D	<p>Offer Validity: 120 days minimum from techno commercial bid opening (Part-1).</p>	
1 (a)	<p>Supply of ABSORBER MIST ELIMINATOR, Performance Testing and Mandatory Spares shall be as per the Specification attached with the enquiry. <u>SAGARDIGHI PROJECT:</u> TECHNICAL PURCHASE SPECIFICATION FOR MIST ELIMINATOR (FGD:ME:1731/Rev No: 01) AND TYPICAL ARRANGEMENT OF MIST ELIMINATOR (Drg No-ME:1731:001, Rev.00) <u>NORTH CHENNAI PROJECT:</u> TECHNICAL PURCHASE SPECIFICATION FOR MIST ELIMINATOR (FGD:ME:8216/Rev No: 01) AND TYPICAL ARRANGEMENT OF MIST ELIMINATOR (Drg No-ME:8216:001, Rev.00)</p>	
1 (b)	<p>PRE QUALIFICATION REQUIREMENT: Offer shall be considered only if bidder is meeting Tender Prequalification requirement (Annexure-P). Vendor to comply with Pre-Qualification requirement of the tender and submit along with their technical bid - the credentials and other documents as indicated in the PQR. Otherwise their offer will get rejected.</p>	
1 (c)	<p><u>Evaluation Criteria:</u> The items are non-divisible in nature.</p> <p>The tender will be evaluated on package basis as indicated below</p> <p><u>Package-1: SAGARDIGHI:-</u> Supply of ABSORBER MIST ELIMINATOR, Supervision for E&C, Performance Testing and Mandatory Spares of SAGARDIGHI project.</p> <p><u>Package-2: NORTH CHENNAI:-</u> Supply of ABSORBER MIST ELIMINATOR, Supervision for E&C, Performance Testing and Mandatory Spares of North Chennai project.</p> <p>L1 will be identified on all-inclusive cost for full scope of work as indicated in the Annexure-B.</p> <p>Evaluation shall be on total landed cost to BHEL Package wise including all cost upto destination.</p> <p>Currency of evaluation shall be INR. Rate quoted in Foreign currencies will be converted to INR by multiplying with the Exchange rate (SBI TT Selling rate) as on the technical bid opening date. If the date of opening happens to be a bank holiday, then the forex rate as on previous bank (SBI) working day shall be taken.</p>	

1 (d)	Vendor shall quote as per the enclosed price Schedule format only.	
1 (e)	<p>Vendor offers will be considered for price bid opening subject to fulfilment of PQR requirement, techno commercial suitability and approval of vendor by customer.</p> <p>After opening of Part-I bid, Bidders who are qualified by BHEL will be asked to submit the required credentials as requested by the customer. Subsequently, if the bidder is not approved by customer or fails to submit the complete credentials before Price Bid opening, their offer will be liable for commercial rejection.</p>	
1 (f)	<p><u>Offer Submission:</u></p> <p>a. This Tender is hosted in EPS portal & offer to be submitted through EPS portal only. You are requested to submit your 2 parts offer before due date & time of the enquiry through NIC (https://eprocurebhel.co.in) only.</p> <p>b. Offer is to be submitted in TWO part bids system (Technical bid + Price bid) in the E-Procurement NIC PORTAL (https://eprocurebhel.co.in) ONLY.</p> <p>c. Scanned copy of the filled Annexure A and B, Tender documents etc., shall be uploaded in the EPS portal.</p> <p>d. At its option, BHEL may consider extending the due date/s for the tender openings. Sufficient notice would be given by BHEL for such extensions and it will be published as corrigendum in following websites, https://eprocurebhel.co.in http://www.bhel.com/tender/</p>	
1 (g)	<p>Authorization for participation in EPS portal through DSC: E-Tender.</p> <p>Participation requirements:</p> <p>Either Principal or authorized agent shall register their Digital Signature Certificate (DSC) (Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION). Suppliers are advised to go through the FAQ available in the web portal (https://eprocurebhel.co.in). DSC shall be registered for the authorized person and all transaction done using that DSC against our tenders shall be taken as valid communication and shall be binding on principal/agent and is valid legally.</p> <p>For foreign Principal</p> <p>In case of Principal (being foreigner), they may apply for DSC through Indian embassy at their country and can register with us for participating in E-tenders. Details of the applicable procedure is available in the webpage http://www.cca.gov.in/cca/.</p> <p>For Indian agent</p> <p>In case of agents participating/registering their DSC (of authorized person), it will be at the sole authorization of principal to their agents to participate on their behalf and all transactions done using that DSC against our tenders shall be known as valid communication and shall binding on principal and is legally valid.</p>	
2 (a)	<p>Firm Price:</p> <p>The quoted / finalised rates shall be Firm till execution of the Contract. Offer with PVC clause will not be considered.</p>	
2 (b)	The Tender will be operated in two part bid system. One-part consisting of PQR, Technical bid with Commercial terms & conditions and other part is Price Bid. Based on the PQR compliance, technical suitability and sub vendor approval by end	

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	customer, vendors will be short-listed. The price Bid of short listed vendors will be opened on a suitable date with due intimation to vendors. Reverse Auction is applicable for this tender.	
3	<p><u>Delivery term:</u> <u>Indigenous Suppliers:</u> The quote shall be on FOR Basis as indicated below inclusive of Packing and forwarding, Freight also to yours account. Transit Insurance is under BHEL scope.</p> <p>SAGARDIGHI Project (Refer Annexure B)</p> <ul style="list-style-type: none"> For Main Supply (Sl. No.1.01):- FOR Sagardighi Project site, West Bengal For Mandatory spares (Sl. no. 1.02 & 1.03):- FOR BHEL Trichy stores. <p>North Chennai Project (Refer Annexure B)</p> <ul style="list-style-type: none"> For Main Supply (Sl. No.2.01):- FOR North Chennai Project site, Tamil Nadu For Mandatory spares (Sl. no. 2.02 & 2.03):- FOR BHEL Trichy stores. <p><u>Import Supplier:</u> Import vendors to submit offers on CFR (Cost & Freight), Chennai port (LILO – Liner in Liner Out) basis for all the packages. Port of loading should be indicated without fail. Port of discharge should be Chennai.</p>	
4	<p><u>Delivery Period:</u> <u>Indigenous Supplier:</u></p> <ul style="list-style-type: none"> Delivery Period shall be 7 months from the Manufacturing clearance. (including Manufacturing, Inspection, Packing, Forwarding and delivery at project site/stores). <p><u>Import Supplier:</u> Delivery Period shall be 7 months from the Manufacturing Clearance (including Manufacturing, Inspection, Packing, Forwarding and Loading on ship).</p> <ul style="list-style-type: none"> Manufacturing clearance for each Package will be provided based on Documents approval from Customer /BHEL and site erection schedule. Material shall be dispatched after obtaining dispatch clearance from BHEL. The delivery dates mentioned above and given in the PO are indicative only. The exact delivery date will be intimated by BHEL while giving dispatch clearance. The supplier shall keep the manufactured items safely till the dispatch clearance is given by BHEL. 	
5 (a)	<p><u>Payment terms:</u> <u>Indigenous Supplier (Non MSE and MSE)</u></p> <p>95% payment will be made directly thru' EFT on “N”th day from the date of site acknowledgement for the receipt of materials subject to availability of 10% Performance Security furnished as per clause 5(b).</p>	

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Balance 5% and 100% of supervision of Erection and Commissioning and Performance charges will be paid on “N”th day after completion of Erection and Commissioning, based on site certification.

If the site is not ready for 26 months from the date of supply, then this balance 5% payment for the supply portion will be released subject to extension of PBG for another 2 years or till completion of E&C, whichever is earlier. However, 100% of supervision of E&C and performance charges will be made only after completion of E&C and performance test, based on site certification.

100% payment for the mandatory spares will be made on “N”th day from the date of receipt and acceptance of materials at BHEL Trichy Stores subject to availability of 10% Performance Security furnished as per clause 5(b).

Value for “N” referred above:

N- 90 for Non MSE vendors, 60 for Medium scale vendors and 45 for MSE vendors.

Import Supplier

Option:1:

BHEL Payment term is 95% payment on CAD basis after 90 days from the date of receipt of documents, specified in PO, at BHEL bank subject to availability of 10% Performance Security furnished as per clause 5(b). Respective bank charges to be paid to respective account

Option-1/Option-2 (Import vendors shall mark the payment option)

Balance 5% and 100% of Supervision for Erection and Commissioning and Performance Test will be made based on tax invoice, in 90 days after completion of Erection and Commissioning based on site certification. If the site is not ready for 26 months from the date of supply, then this balance 5% payment for the supply portion will be released subject to extension of Performance Security for another 2 years or till completion of E&C, whichever is earlier. However, 100% of supervision of E&C and Performance test will be made only after completion of E&C, based on site acknowledgement.

100% payment for the mandatory spares will be made in 90 days from the date of receipt of acceptance of material at BHEL Trichy stores subject to availability of 10% Performance Security furnished as per clause 5(b).

Option:2:

If supplier insists for LC for initial 95 % payment for supply portion, only Usance LC with 120 days credit will be opened one month prior to material readiness. Hence, supplier shall intimate the material readiness accordingly for opening of LC. LC validity period will be 90 days and for any extension, applicable charges will be to supplier's account.

Upon LC expiry, the subsequent bills will be against CAD basis.

Any deviation in the above payment term will attract loading as mentioned below.

MCLR rate of SBI p.a. + 6% (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) shall be considered for loading for the period of relaxation sought by bidders subject to competent authority approval.

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Example of the same is provided below.

Payment term	Relaxation period (days)	Loading (@ MCLR 8.65% p.a. + 6%)
LC 90 days	30	1.20%
LC 60 days	60	2.41 %
LC 30 days	90	3.61%

5 (b) **Performance Security:**

To ensure due performance of the contract, Performance Bank Guarantee (PBG) or Security Deposit (SD), hereafter referred as Performance Security shall be submitted by successful bidder on whom contract is awarded. The Performance Security shall be for **10% of the PO value and shall be furnished on a specific date intimated which is generally 14 days after date of purchase order/LOI**. Performance Security shall be valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the supplier, including warranty obligations as indicated in the tender &/Purchase Order.

a) Performance security may be furnished in the following forms:

(i) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.

(ii) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.

(iii) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).

(iv) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL).

v) Insurance Surety Bond.

(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith)

b) In case of GTE tenders, the performance security should be in the same currency as the contract and must conform to Uniform Rules for Demand Guarantees (URDG 758) - an international convention regulating international securities.

BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents related to furnishing of Performance Security or in any

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	<p>other matter connected therewith.</p> <p>Performance Security will be forfeited and credited to BHEL's account in the event of a breach of contract by the supplier.</p> <p>Performance Security will be refunded to the contractor without interest, after supplier duly performs and completes the contract in all respects including warranty obligations.</p> <p>Performance Security shall not carry any interest.</p>	
6 (a)	<p>Liquidated damages (LD):</p> <ol style="list-style-type: none"> Time is the essence of the contract. The ordered items shall be delivered as per the delivery period specified in the contract In case the supplier supplies the ordered items beyond the delivery period specified, Liquidated Damages -LD - as detailed below shall be levied from the supplier without prejudice to any other relief/ compensation available to BHEL, Tiruchirappalli under any other condition of the contract/applicable legal provisions. <ol style="list-style-type: none"> Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order(PO) would make the supplier liable to an <i>un-conditional LD at the rate of 0.5% of undelivered portion per week of the delay or part thereof subject to a maximum of 10% of Purchase order value.</i> Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value). Indigenous: Date of reckoning LD shall be as below: <p>For Direct to Project Site despatch: - Site Acknowledgement date.</p> <p>For BHEL Trichy stores despatch: - Vehicle/Gate Entry date.</p> Import: For CFR terms, BL date will be considered for LD calculation. 	
6(b)	<p>PO will be released separately for below mentioned items:</p> <ul style="list-style-type: none"> • Main Supply for Sagardighi project • Mandatory Spares for Sagardighi project • Main Supply for North Chennai project • Mandatory Spares for North Chennai project <p>(i.e. 4 POs in total)</p> <p>In case of PO placements, required documents have to be submitted for approval inline with below details & reply for any further clarification has to be within 7 days. Any delay beyond the above specified period will be considered during LD calculation.</p> <ul style="list-style-type: none"> • For SAGARDIGHI: Clause no-15 (DOCUMENTATION-Documents to be submitted after Award of Contract) of Technical Purchase Specification for Mist Eliminator, Ref No: FGD:ME:1731/Rev 01). • For NORTH CHENNAI: Clause no-15 (DOCUMENTATION-Documents to be submitted after Award of Contract) of Technical Purchase Specification for Mist Eliminator, Ref No: FGD:ME:8216/Rev 01). 	

7 (a)	Guarantee / Warranty Period: The Warranty Period shall be twenty-four (24) months from the date of Supply or eighteen (18) months from the date of commissioning, whichever first occurs.	
7 (b)	Repair & replacements: If during the Warranty/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 Bidder, the Bidder shall promptly, in consultation and agreement with BHEL regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as the Bidder shall, at its discretion, determine) such defect as well as any damage to the Facilities caused by such defect.	
7 (c)	In case of failure of the equipment to meet the guarantee, END CUSTOMER/BHEL reserves the right to reject the equipment. However, END CUSTOMER/BHEL reserves the right to use the equipment until new equipment supplied by bidder meets the guaranteed requirement .	
7 (d)	Guarantee / Warranty Period: No Deviation is permitted. If still vendor offered any deviation on the Guarantee / warranty period, it may lead to rejection of offer.	
7 (e)	SUPERVISION OF ERECTION AND COMMISSIONING: The erection of Mist Eliminator and washing system will be done by owner as per Erection Manual and check List provided by bidder. However, the bidder shall visit Mist Eliminator System/Absorber for supervision of erection and commissioning. There will be one visit (20 days) for each project Mist Eliminator system. Total- 40 days. Price to be quoted by the bidder in terms of price per man-day for erection and commissioning support. This service will be utilized by BHEL-site through power sector regions. Separate PO will be released by BHEL-Site through power sector regions to avail the vendor's supervision service. Depending upon the actual duration of erection and commissioning support availed, the payment will be paid by BHEL- power sector regions based on the vendor quoted amount (price per man-day). The bidder will be informed well in advance for the visit at project site. All TA/DA, Travel Expenses, boarding and lodging shall be borne by the bidder and shall be inclusive in supervision portion. Price comparison for evaluating the lowest bid will be considered all main supply, performance testing, supervision of E&C charges and mandatory spares price all together. The price calculated for 20 days of Supervision of erection and commissioning per one set of Mist Eliminator or 2 % of the total contract value of Main supply items whichever is lower will be considered for price comparison. Depending upon the actual duration of Supervision of erection and commissioning availed, the payment will be paid by BHEL- Power Sector regions based on the vendor quoted amount (price per man-day) with total Erection and Commissioning Supervision charges limited to cap of 2% of the total contract value of Main supply items.	

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8	<p>Documents are to be submitted along with technical bid (Part-1)</p> <ul style="list-style-type: none"> • For SAGARDIGHI : Clause no-15 (DOCUMENTATION-Documents to be submitted along with the Bid) of Technical Purchase Specification for Mist Eliminator, Ref No: FGD:ME:1731/Rev No:01). Bidder shall furnish the pricing details for Recommended Spares along with Technical Bid as per Clause no11.2 of of Technical Purchase Specification for Mist Eliminator. Prices of recommended spares will not be considered for evaluation of the bid. • For NORTH CHENNAI : Clause no-15 (DOCUMENTATION-Documents to be submitted along with the Bid) of Technical Purchase Specification for Mist Eliminator, Ref No: FGD:ME:8216/Rev No:00). Bidder shall furnish the pricing details for Recommended Spares along with Technical Bid as per Clause no11.2 of of Technical Purchase Specification for Mist Eliminator. Prices of recommended spares will not be considered for evaluation of the bid. • PQR supporting Documents as per Annexure-P • Detailed BOM of the package with weight details of each item • Filled & Signed Third party non-disclosure agreement • Filled up and Signed No Deviation Format • Filled & Signed Integrity Pact • Filled & Signed Annexure-A • Local Content Certification • MSE Certificates (if applicable) • Documents in support of duty benefits (if applicable) <p>Documents are to be submitted along with Price bid (Part-2)</p> <ul style="list-style-type: none"> • Priced offer on NIC Portal <p>Note: All the pages of documents are to be signed and sealed by authorized signatory of the company. Any query during technical evaluation shall be replied within three days failing which offer may be rejected as non-responsive.</p>	
9	<p>Inspection and testing requirements:</p> <p>Inspection and testing requirements are to be carried out as per the specification and BHEL/Customer approved Drawing. (Quality plan & Inspection and Test Procedure shall be submitted for BHEL/Customer approval), Technical spec & QP and all test certificates are to be submitted in complete set.</p> <p><u>Inspection notice period:</u></p> <p>For Third Party Inspection, Vendor shall raise inspection call to at least three <u>working day</u>, prior to the proposed date of inspection at vendor works.</p>	
10	<p><u>Packing & Forwarding Requirements:</u></p> <p>Packing & Forwarding Requirements shall be as per Clause-6 (PACKING AND FORWARDING) of Technical Specification document of each Package.</p>	
11 (a)	<p><u>Conditions for Import Suppliers</u></p> <p>The preferred shipment mode “Containerized Cargo or Break Bulk” shall be specified clearly in the offer.</p> <p><u>FOR CFR INCO TERMS – CONTAINERIZED CARGO</u></p> <ul style="list-style-type: none"> ○ For CFR terms, moved through CONTAINERS (Suppliers should clearly specify this in their offer) it would be presumed by BHEL that the freight charges quoted is on LILO (LINER IN LINER OUT) basis including extra charges, if any, like Container Imbalance Charges, Trade Imbalance charges or any other charges payable to the Liner. No other charges other than the 	

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quoted Freight rate will be paid by BHEL excepting applicable Terminal Handling Charges, Container cleaning Charges, DO charges to Shipping Liner at Discharge Port. 14 FREE DAYS FOR Container detention shall be provided.

- In case of shipment through Containers on CFR basis, the BL should bear the endorsement that “14 free days for Container Detention is applicable”.

FOR BREAKBULK CARGO:

- For CFR terms, moved through BREAK BULK BASIS (Suppliers should clearly specify this in their offer) it would be presumed by BHEL that the freight charges quoted is on LILO (LINER IN LINER OUT) basis.
- The materials will be Custom cleared from Port itself.

Important Information for Import Suppliers:

- Indian Customs has imposed a penalty on late filing of Bill of Entries (Air/Sea Shipments) by the importer. Bill of Entry is Required to be Filed Latest by the End of Day Preceding the Day (including Holidays) of Arrival of the Vessel for sea shipments and by the end of same day on arrival of air shipment. Penalty for not filing Bill of Entry within the specified time period is Rs.5000/- per day (for Initial 03 days) & Rs.10000/- per day (thereafter).
- The vendor should submit the Non-Negotiable Documents (Air Way Bill/Bill of Lading, Commercial Invoice, Packing List, Certificate of Origin, etc.) either by email or post/courier to BHEL well before the landing of cargo at final port of discharge, giving sufficient lead time for BHEL to process the procedures that are to be done before arrival of vessel at discharge port.
- Vendor will be held responsible for the penalty arises against the late filing of Bill Of entry due to:
 - a. Non availability of Non-Negotiable Documents (NNDs) before the cargo arrival
 - b. Discrepancy in documents
 - c. Short landing of Consignments (For shipments on CFR/CPT/CIF/CIP – Chennai Port)
- For all the shipments of the contracts (POs) finalized on CFR -Chennai Port basis:
 - (i) Delivery Orders involving multiple agencies like liners/freight forwarders are not allowed. There must be a single agency office at the final discharge Port (Chennai) for issuing the Delivery Order to BHEL.
 - (ii) The detention/demurrage charges arising due to the nomination of containers under single BL to different/ multiple CFS by the liner will be deducted from Vendor's bills only.
 - (iii) The detention/demurrage charges arise due to the delay in collection of Delivery Orders from multiple agencies of liner/freight forwarder also whose offices are not at available Chennai, the same amount will be deducted from Vendor's bills only.
 - (iv) Apart from the normal charges like Terminal Handling Charges, Container cleaning Charges, Delivery Order Charges at final port of discharge no other charges will be borne by BHEL.
 - (v) The liner/freight forwarders should be properly communicated by the Vendor for not to claim such charges for issuing Delivery Order. If the liner/freight

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forwarder claims such charges in their invoices, the same amount will be deducted from the Vendor bills without any prior intimation in order to avoid the delay in Customs clearance. The likely additional/hidden costs or charges are:

- CIC - Container Imbalance Charges/Surcharges
- EIC - Equipment Imbalance Charge/Surcharges
- CAF - Container/Currency Adjustment Factor
- BAF - Bunker adjustment Factor
- RDS - Rupee Depreciation Surcharge
- CDS - Currency Depreciation Surcharge
- PCS - Port Congestion Surcharge
- LSS - Low Sulphur Surcharge
- Devanning Charges

Transport Conditions for Import:

The Original Documents (Bill of Lading, Invoice, Packing List, Certificate of Origin & Test Certificate) shall reach BHEL well in advance before the vessel arrival. The soft copies of the above shall be forwarded to BHEL immediately after shipment.

- 14 FREE DAYS for Container detention at final port of destination shall be provided and the same to be endorsed in the Bill of Lading. If there is no free day or less than 14 free days provided by the supplier, the actual cost incurred towards detention charges due to non-availability of above said free days will be recovered from the supplier Invoice.
- In the event of delayed submission of documents/ non-submission of documents by the supplier as per the mutually agreed terms, an amount up to 5% of the invoice value will be retained towards detention/ demurrage & other charges and the difference if any between actual charges and recovery will be settled separately through supplementary invoice.
- In such cases, the Supplier shall authorize the Steamer / Shipping agent / transporter to freely release the consignment to BHEL by providing a "Surrender Bill of Lading".
- Otherwise, No-objection Certificate shall be issued to the Liner, authorizing BHEL to get the Delivery Order without producing the Original Bill of Lading.
- This is required to ensure avoidance of detention/ demurrage at Chennai Sea-port that may arise in case of delayed presentation of documents by the Seller.

<p>11(b) Duty benefits for import vendors</p> <p>a) Whether PTA/ CEPA or any other agreement/treaty between respective Governments/Countries exists and the same is applicable for your supplies w.r.t this Enquired Items/tender.</p> <p>b) If yes, mention the Concessional Customs Duty (Such Duty Benefits) %</p> <p>c) Documentary proof for the applicable Concessional Customs Duty (eg. PTA/ CEPA or other agreement) shall be submitted along with the Part-1 bid.</p> <p>d) Relevant documents and details to avail the above concessional duty benefits by BHEL shall be submitted by the supplier along with dispatch documents.</p>	<p>YES / NO</p> <p>SUBMITTED/NOT SUBMITTED</p> <p>CONFIRMED/NOT CONFIRMED</p>
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	<p>e) In the event of seller failing to provide appropriate documents along with dispatch documents for purchasers to avail disclosed concessional duty benefits in India, financial loss, so incurred, will be to the seller's account.</p> <p>Note: Evaluation of the Price bids will be based on the above details only and unless mentioned/furnished by the vendor, Customs Duty benefit will not be applied for evaluation purposes.</p>	CONFIRMED/NOT CONFIRMED
12 (a)	<p>Taxes:</p> <p>GST shall be paid extra as applicable and suitable documents for availing Input tax credit shall be provided.</p> <p>“Recovery / deduction (like TDS/TCS etc) as applicable as per Direct and Indirect taxes as notified by Govt. Of India from time to time will be made. Information / Tax deduction certificate for such deduction/recoveries shall be provided by BHEL to the vendor”</p>	
12 (b)	Kindly indicate the GST No of your Firm	
12(c)	Kindly Indicate the HSN Code for all items	
12 (d)	Please indicate the applicable GST % (IGST)	
12 (e)	Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GST registration Number (GSTIN) which should be clearly mentioned in the offer. If the dealer is exempted from GST registration, a declaration with due supporting documents need to be furnished for considering the offer. Dealers under composition scheme should declare that he is a composition dealer supported by the screen shot taken from GSTN portal. The dealer has to submit necessary documents if there is any change in status under GST	
12 (f)	Supplier shall mention their GSTIN in all their invoices (incl. credit Notes, Debit Notes) and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No. which is linked/uploaded in GSTN network shall be clearly indicated), Billed to party (with GSTIN) & Shipped to party details, item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, Place of Supply etc. Wherever E-Invoice is applicable, the tax invoice/ CN / DN submitted by the vendor must contain the QR code generated in E-Invoice Portal & IRN.	
12 (g)	All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code)	
12 (h)	<p>Invoices will be processed only upon completion of statutory requirement and further subject to following:</p> <p>i. Vendor declaring such invoice in their GSTR-1 Return/ IFF</p> <p>ii. Receipt of Goods or Services and Tax invoice by BHEL</p>	
12 (i)	As the continuous uploading of tax invoices in GSTN portal (in GSTR-1/ IFF) is available for all (i.e. both Small & Large) tax payers, all invoices raised on BHEL may be uploaded immediately in GST portal on dispatch of material /rendering of services. The supplier shall ensure availability of Invoice in GSTN portal before submission of invoice to BHEL. Invoices will be admitted by BHEL only if the	

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	invoices are available in GSTN portal (in BHEL's GSTR-2A/ GSTR-2B).	
12 (j)	In case of discrepancy in the data uploaded by the supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note or debit note (details also to be uploaded in GSTN portal) for the shortages or rejections in the supplies or additional claims, within the calendar month informed by BHEL.	
12 (k)	In case GST credit is denied to BHEL due to non-receipt or delayed receipt of goods and/ or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount claimed in the invoice shall be disallowed to the vendor.	
12 (l)	Where any GST liability arising on BHEL under Reverse Charge (RCM), the vendor has to submit the invoices to BHEL well within the timeline prescribed in GST Law, to enable BHEL to discharge the GST liability. If there is a delay in submission of invoice by the vendor resulting in delayed payment of GST by BHEL along with Interest, then such Interest payable or paid shall be recovered from the vendor.	
12 (m)	GST TDS will be deducted as per Section 51 of CGST Act 2017 and in line with Notification 50/2018 –Central Tax dated 13.09.2018. GST TDS certificate will be generated in GSTN portal subsequent to vendor accepting the TDS deduction in the GSTN portal & the vendor can directly download the Certificate from the GSTN Portal.	
12 (n)	In cases where invoice details have been uploaded by the vendor but failed to remit the GST amount to GST Department (Form PMT-06 or GSTR-3B to be filed) within stipulated time, then GST paid on the invoices pertaining to the month for which GST amount not remitted by the vendor will be withheld from other payments of the vendor / recovered from the vendor.	
13	<p>Breach of contract, Remedies and Termination:</p> <p>In case of breach of contract, wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is 10% of the contract value or more, such security instruments to the extent of 10% contract value will be encashed. In case the value of the security instruments available is less than 10% of the contract value, the balance amount will be recovered in all or any of the following manners:</p> <ol style="list-style-type: none"> from dues available in the form of Bills payable to defaulted supplier against the same contract. from the dues payable to defaulted supplier against other contracts in the same Region/Unit /any other region/unit In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier. <p>Further, levy of liquidated damages, debarment, termination, de-scoping, short-closure, etc., will be applied as per provisions of the contract/applicable guidelines.</p>	

14	<p>Suspension of Business Dealings:</p> <p>"The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the firms debarred across BHEL, shall be rejected. The list of firms debarred across BHEL is available on BHEL website www.bhel.com.</p> <p>1.0 Integrity commitment, performance of the contract and punitive action there of:</p> <p>1.1. Commitment by BHEL: BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.</p> <p>1.2. Commitment by Bidder/ Supplier/ Contractor:</p> <p>1.2.1. The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.</p> <p>1.2.2. The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.</p> <p>1.2.3. The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.</p> <p>If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in malpractices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extant guidelines of the company available on www. bhel.com and/or under applicable legal provisions</p>	
15	<p><u>Fraud Prevention Policy</u></p> <p>Bidder along with its associate /collaborators /sub-contractors /sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.</p>	
16	<p><u>Cartel Formation</u></p> <p>The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). 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. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.</p>	

17	<p><u>Resolution of Disputes</u></p> <p>The Parties agree that if at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation, effect, interpretation or breach of the contract/tender which the Parties are unable to settle mutually), arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.</p> <p>The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof. Notes:</p> <ol style="list-style-type: none"> 1. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators. 2. Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators. <p>The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Annexure-C to this Terms and conditions.</p> <p>The Annexure-C together with its appendices will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in this terms and conditions.</p> <p>Except as provided elsewhere in this Contract, in case amicable settlement is not reached between the parties, in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract, then, either Party may, by a notice in writing to other Party refer such dispute or difference to sole arbitration of an arbitrator appointed as per the Arbitration and Conciliation Act, 1996 (India) or statutory modification or re- enactment thereof and the rules made thereunder and for the time being in force.</p> <p>The Arbitrator shall pass a reasoned award and the award of the Arbitrator shall be final and binding upon the parties.</p> <p>Subject as aforesaid, the provision of Arbitration & Conciliation Act 1996 (India) or statutory modification or re-enactment thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceeding under this clause.</p> <p>The seat of arbitration shall be Trichy, Tamil Nadu, India</p> <p>The cost of arbitration shall be borne as per the award of the Arbitrator.</p> <p>Subject to arbitration in terms of clause above, the Courts at Trichy, Tamil Nadu, India shall have exclusive jurisdiction over any matter arising out of or in connection with this Contract.</p>	
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	<p>Notwithstanding the existence or any dispute or difference and/or reference for the arbitration, the vendor shall proceed with and continue without hindrance the performance of its obligation under this Contract with due diligence and expedition in a professional manner except where the Contract has been terminated by either Party in terms of this Contract.</p> <p><u>In Case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:</u></p> <p>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)/Port Trusts inter se and also between CPSEs and Government Departments/Organizations (Excluding disputes concerning Railways, Income Tax, Customs & Excise Departments, such dispute or difference shall be taken up by either party for its resolution through AMRCD as mentioned in DPE OM No.05/003/2019-FTS-10937 dtd. 14TH December , 2022 and the decision of AMRCD on the said dispute will be binding on both the parties.</p>	
18	<p><u>Force Majeure clause</u></p> <p>a. Notwithstanding the provisions contained in other clauses, the supplier shall not be liable for imposition of any such sanction so long the delay and/or failure of the supplier in fulfilling its obligations under the contract is the result of an event of Force Majeure. For purposes of this clause, Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable and not brought about at the instance of the party claiming to be affected by such event and which has caused the non – performance or delay in performance. Such events may include, but are not restricted to, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes excluding by its employees, lockouts excluding by its management, freight embargoes and Acts of GOD.</p> <p>b. If a Force Majeure situation arises, the supplier shall promptly notify the Purchaser/Consignee in writing of such conditions and the cause thereof within twenty-one days of occurrence of such event. Unless otherwise directed by the Purchaser/Consignee in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.</p> <p>c. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side.</p> <p>d. In case due to a Force Majeure event the Purchaser/Consignee is unable to fulfil its contractual commitment and responsibility, the Purchaser/Consignee will notify the supplier accordingly and subsequent actions taken on similar lines described in above sub-paragraphs.</p>	
19.	<p>Set-off Clause: BHEL shall have the right to recover any money, which in the sole opinion of BHEL is due from the Contractor, from any money due to the Contractor under this Contract or any other contract or from the Security Deposit & bank Guarantee's, if any, furnished by the Contractor under this Contract or any other contract.</p>	

20	<p>Non-Disclosure Agreement(NDA):</p> <p>The bidders shall enter into the Non-disclosure agreement totally voluntarily, with full knowledge of its meaning and without duress. (Format attached).</p>	
21	<p><u>Vendor to note the below points at the time of dispatch and shall adhere for indigenous suppliers</u></p> <p>a. After material readiness and inspection completion (by TPI/ BHEL/ End Customer), vendor shall seek dispatch clearance from BHEL. Until receipt of dispatch clearance from BHEL, the vendor shall keep the manufactured item, safe and secure.</p> <p>b. After obtaining dispatch clearance from BHEL, vendor shall proceed to generate dispatch documents. After generating dispatch documents (Invoice, LR, E-waybill etc.) vendor shall immediately share these documents to BHEL (scan copy over email) for accounting the materials and securing insurance coverage.</p> <p>c. After accounting, BHEL would be issuing movement clearance to vendor immediately. Only after movement clearance is received from BHEL, actual/physical movement of goods out of vendor's premises shall commence.</p> <p>d. Non-adherence to the above may lead to GST authorities seizing the vehicle & goods and imposing penalty & interest. Any such implication would be to vendors account only.</p> <p>e. Provision of GST Act highlighted below in connection to this - Pursuant to Sec 31 of CGST Act 2017, a tax invoice has to be raised by the registered person supplying taxable goods before or at the time of removal of goods for supply to the recipient, where the supply involves movement of goods. Where a taxable person supplies any goods without issue of any invoice, the tax authorities has powers to detain the consignment and impose penalties equivalent to 200% of the tax payable as per Section 129 of CGST Act 2017."</p>	
22	<p>As per extant provisions of Income Tax Act, 1962 in India, foreign suppliers have to submit the following documents to avail benefits under DTAA at time of each dispatches, failing which TDS will be applicable considering Business Income in India. (Current TDS rate @ 40% as per the extant law provisions) plus applicable surcharge and cess is to be deducted u/s. 195 of I.T. Tax Act.</p> <p>Valid Tax Residency Certificate issued by Govt / Tax agency of country.</p> <p>Form 10F duly filed signed. (sample copy as per Annexure-DT1)</p> <p>No PE and No Business connection declaration in mills letter head.</p> <p>Declaration of No Significant Economic Presence (SEP) in India as per Indian I.T Rule 11UD & indemnity to pay taxes at later stages on demand.</p> <p>Self-declaration that Non-resident is eligible to obtain benefits of relevant DTAA between India and Supplier's country. (sample copy as per Annexure-DT2)</p>	
23	<p><u>Conflict of Interest Among Bidders/Agents:</u></p> <p>A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. The bidder found to have a conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in</p>	

	<p>this bidding process, if:</p> <ol style="list-style-type: none"> they have controlling partner (s) in common; or they receive or have received any direct or indirect subsidy/ financial stake from any of them; or they have the same legal representative/agent for purposes of this bid; or they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; or Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly! Assemblies from one bidding manufacturer in more than one bid; or In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorise only one agent/dealer. There can be only one bid from the following: <ol style="list-style-type: none"> The principal manufacturer directly or through one Indian agent on his behalf; and Indian/foreign agent on behalf of only one principal; <p style="text-align: center;">or</p> A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; or In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business in the format given in Annexure-Y. 	
Note	<ol style="list-style-type: none"> In the event of our customer order covering this tender being cancelled /placed on hold /otherwise modified, BHEL would be constrained to accordingly cancel / hold / modify the tender at any stage of execution. BHEL may negotiate the L1 rate, if not meeting our budget / estimated cost. BHEL may re-float the tender opened, if L1 price is not acceptable to BHEL even after negotiation. Any deviation from the conditions specified in TECHNO-COMMERCIAL TERMS AND CONDITIONS - Annexure-A, will lead to rejection of offer. Any change in applicable rates of Tax or any other statutory levies (Direct / Indirect) or any new introduction of any levy by means of statute and its corresponding liability for the deliveries beyond the agreed delivery date for reasons not attributable to BHEL will be to vendors account. BHEL will not reimburse the same and any subsequent claim in this respect will be summarily rejected. BHEL reserves its right to reject an offer due to unsatisfactory past performance by the respective Vendor in the execution of any contract to any BHEL project / Unit. The offers of the bidders who are under suspension and also the offers of the bidders, who engage the services of the banned firms /principal/agents, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com. Recovery / deduction as applicable as per Direct and Indirect taxes as notified by Govt. Of India from time to time will be made and information/certificate for such deduction/recoveries shall be provided by BHEL to the vendor. 	

	7. Any other Techno -Commercial Terms indicated by the vendor in their offer elsewhere will be ignored. BHEL will proceed with tender evaluation as per Annexure-A only.
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FORM NO. 10F

[See sub-rule (1) of rule 21AB]

**Information to be provided under sub-section (5) of section 90 or
sub-section (5) of section 90A of the Income-tax Act, 1961**

I. *son/daughter of Shri. in the capacity of
 (designation) do provide the following information,
 relevant to the previous year..... *in my case/in the case
 of..... for the purposes of sub-section (5) of *section 90/section 90A:—

<i>Sl.No</i>	<i>Nature of information</i>	<i>:</i>	<i>Details #</i>
(i)	Status (individual, company, firm etc.) of the assessee	:	
(ii)	Permanent Account Number or Aadhaar Number of the assessee if allotted	:	
(iii)	Nationality (in the case of an individual) or Country or specified territory of incorporation or registration (in the case of others)	:	
(iv)	Assessee's tax identification number in the country or specified territory of residence and if there is no such number, then, a unique number on the basis of which the person is identified by the Government of the country or the specified territory of which the assessee claims to be a resident	:	
(v)	Period for which the residential status as mentioned in the certificate referred to in sub-section (4) of section 90 or sub-section (4) of section 90A is applicable	:	
(vi)	Address of the assessee in the country or territory outside India during the period for which the certificate, mentioned in (v) above, is applicable	:	

2. I have obtained a certificate referred to in sub-section (4) of section 90 or sub-section (4) of section 90A from the Government of (name of country or specified territory outside India)

Signature:

Name:

Address:

Permanent Account Number or Aadhaar Number

Verification

I do hereby declare that to the best of my knowledge and belief what is stated above is correct, complete and is truly stated.

Verified today the day of.....

.....
Signature of the person providing the information

Place:

Notes :

1. *Delete whichever is not applicable.
2. #Write N.A. if the relevant information forms part of the certificate referred to in sub-section (4) of section 90 or sub-section (4) of section 90A.

We do not wholly or partly carry on business in the Republic of India through a Permanent Establishment in India. Further we do not constitute any Permanent Establishment in India in accordance with the Article No. 5 of the DTAA between India and _____ (Supplier country name)

We also declare No Significant Economic Presence (SEP) in India as per Indian IT Rule 11UD and self-declare that No-resident is eligible to obtain benefits of relevant DTAA between India and _____

We do not have a business connection¹ in the Republic of India as per Section 9(1)(i) of the Act.

As and whenever we will constitute / establish any Permanent Establishment/ business connection in India or deemed to have a Permanent Establishment / business connection in India or in case it is held by Indian Income Tax Authorities that we have a Permanent Establishment / business connection in India (referred as 'event'), we will bring this to the knowledge of Bharat Heavy Electricals Limited before any subsequent payments are released by Bharat Heavy Electricals Limited or within 5 working days of any such event, whichever is earlier.

We hereby declare that whatever is stated above is true and correct. In the event there is any change in any of the facts stated above, we will bring this to the knowledge of Bharat Heavy Electricals Limited before any subsequent payments are released by Bharat Heavy Electricals Limited or within 5 working days of any such event, whichever is earlier.

Where any tax, interest, penalty is levied on Bharat Heavy Electricals Limited for non/lower withholding of taxes on account of the above declarations being incorrect, we, Name of vendor, hereby undertake that we shall reimburse Bharat Heavy Electricals Limited such amounts as would be demanded by the Tax Authorities along with Interest and Penalty.

Explanation in foot mark

¹ The term 'business connection' shall include significant economic presence ("SEP") of a non-resident in India, w.e.f. 1 April 2021. As per Explanation 2A to Section 9(1)(i) of the Act read with Notification no. 41 of 2021, SEP for this purpose, shall mean:- (a) transaction in respect of any goods, services or property carried out by a non-resident with any person in India including provision of download of data or software in India, for which aggregate payments

Annexure-C

BRIEF PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS

1. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided herein:
2. The party desirous of resorting to Conciliation shall send an invitation/notice in writing to the other party to conciliate specifying all points of Disputes with details of the amount claimed. The party concerned shall not raise any new issue thereafter. Parties shall also not claim any interest on claims/counter-claims from the date of notice invoking Conciliation till the conclusion of the Conciliation proceedings.
3. The party receiving the invitation/notice for Conciliation shall within 30 days of receipt of the notice of Conciliation intimate its consent for Conciliation along with its counter-claims, if any.
4. The Conciliation in a matter involving claim or counter-claim (whichever is higher) up to Rs 5 crores shall be carried out by sole Conciliator nominated by BHEL while in a matter involving claim or counter-claim (whichever is higher) of more than Rs 5 crores
Conciliation shall be carried out by 3 Conciliators nominated by BHEL.
5. The Parties shall be represented by only their duly authorized in-house executives/officers and neither Party shall be represented by a Lawyer.
6. The first meeting of the IEC shall be convened by the IEC by sending appropriate communication/notice to both the parties as soon as possible but not later than 30 days from the date of his/their appointment. The hearings in the Conciliation proceeding shall ordinarily be concluded within two (2) months and, in exceptional cases where parties have expressed willingness to settle the matter or there exists possibility of settlement in the matter, the proceedings may be extended by the IEC by a maximum of further 2 months with the consent of the Parties subject to cogent reasons being recorded in writing.

7. The IEC shall thereafter formulate recommendations for settlement of the Disputes supported by reasons at the earliest but in any case within 15 days from the date of conclusion of the last hearing. The recommendations so formulated along with the reasons shall be furnished by the IEC to both the Parties at the earliest but in any case within 1 month from the date of conclusion of the last hearing.
8. Response/modifications/suggestions of the Parties on the recommendations of the IEC are to be submitted to the IEC within time limit stipulated by the IEC but not more than 15 days from the date of receipt of the recommendations from the IEC.
9. In the event, upon consideration, further review of the recommendations is considered necessary, whether by BHEL or by the other Party, then, the matter can be remitted back to the IEC with request to reconsider the same in light of the issues projected by either/both the Parties and to submit its recommendations thereon within the following 15 days from the date of remitting of the case by either of the Parties.
10. Upon the recommendations by the Parties, with or without modifications, as considered necessary, the IEC shall be called upon to draw up the Draft Settlement Agreement in terms of the recommendations.
11. When a consensus can be arrived at between the parties only in regard to any one or some of the issues referred for Conciliation the draft Settlement Agreement shall be accordingly formulated in regard to the said Issue(s), and the said Settlement Agreement, if signed, by the parties, shall be valid only for the said issues. As regards the balance issues not settled, the parties may seek to resolve them further as per terms and conditions provided in the contract.
12. In case no settlement can be reached between the parties, the IEC shall by a written declaration, pronounce that the Conciliation between the parties has failed and is accordingly terminated.
13. Unless the Conciliation proceedings are terminated in terms of para 22 (b), (c) & (d) herein below, the IEC shall forward his/its

recommendations as to possible terms of settlement within one (1) month from the date of last hearing. The date of first hearing of Conciliation shall be the starting date for calculating the period of 2 months.

14. In case of 3 members IEC, 2 members of IEC present will constitute a valid quorum for IEC and meeting can take place to proceed in the matter after seeking consent from the member who is not available. If necessary, videoconferencing may be arranged for facilitating participation of the members. However, the IEC recommendations will be signed by all members. Where there is more than one (1) Conciliator, as a general rule they shall act jointly. In the event of differences between the Members of IEC, the decision/recommendations of the majority of the Members of IEC shall prevail and be construed as the recommendation of the IEC.
15. The Draft Settlement Agreement prepared by the IEC in terms of the consensus arrived at during the Conciliation proceedings between the Parties shall be given by the IEC to both the parties for putting up for approval of their respective Competent Authority.
16. Before submitting the draft settlement agreement to BHEL's Competent Authority viz. the Board Level Committee on Alternative Dispute Resolution (BLCADR) for approval, concurrence of the other party's Competent Authority to the draft settlement agreement shall be obtained by the other party and informed to BHEL within 15 days of receipt of the final draft settlement agreement by it. Upon approval by the Competent Authority, the Settlement Agreement would thereafter be signed by the authorized representatives of both the Parties and authenticated by the members of the IEC.
17. In case the Draft Settlement Agreement is rejected by the Competent Authority of BHEL or the other Party, the Conciliation proceedings would stand terminated.
18. A Settlement Agreement shall contain a statement to the effect that each of the person(s) signing thereto (i) is fully authorized by the respective Party(ies) he/she represents, (ii) has fully understood the contents of the same and (iii) is signing on the

same out of complete freewill and consent, without any pressure, undue influence.

19. The Settlement Agreement shall thereafter have the same legal status and effect as an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal passed under section 30 of the Arbitration and Conciliation Act, 1996.
20. Acceptance of the Draft Settlement Agreement/recommendations of the Conciliator and/or signing of the Settlement Agreement by BHEL shall however, be subject to withdrawal/closure of any arbitral and/or judicial proceedings initiated by the concerned Party in regard to such settled issues.
21. Unless otherwise provided for in the agreement, contract or the Memorandum of Understanding, as the case may be, in the event of likelihood of prolonged absence of the Conciliator or any member of IEC, for any reason/incapacity, the Competent Authority/Head of Unit/Division/Region/Business Group of BHEL may substitute the Conciliator or such member at any stage of the proceedings. Upon appointment of the substitute Conciliator(s), such reconstituted IEC may, with the consent of the Parties, proceed with further Conciliation into the matter either de-novo or from the stage already reached by the previous IEC before the substitution.
22. The proceedings of Conciliation under this Scheme may be terminated as follows:
 - a. On the date of signing of the Settlement agreement by the Parties; or,
 - b. By a written declaration of the IEC, after consultation with the parties, to the effect that further efforts at conciliation are no longer justified, on the date of the declaration; or,
 - c. By a written declaration of the Parties addressed to the IEC to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
 - d. By a written declaration of a Party to the other Party and the IEC, if appointed, to the effect that the Conciliation proceedings are terminated, on the date of the declaration.
 - e. On rejection of the Draft Settlement Agreement by the Competent Authority of BHEL or the other Party.

23. The Conciliator(s) shall be entitled to following fees and facilities:

S1 No	Particulars	Amount
1	Sitting fees	Each Member shall be paid a Lump Sum fee of Rs 75,000/- for the whole case payable in terms of paragraph No. 27 herein below.
2	Towards drafting of settlement agreement	In cases involving claim and/or counter-claim of up to Rs 5crores. Rs 50,000/- (Sole Conciliator)

S1 No	Particulars	Amount
		<p>In cases involving claim and/or counter-claim of exceeding Rs 5 crores but less than Rs 10 crores. Rs 75,000 (per Conciliator) In cases involving claim and/or counter-claim of more than Rs 10 crores. Rs 1,00,000/- (per Conciliator)</p> <p>Note: The aforesaid fees for the drafting of the Settlement Agreement shall be paid on Signing of the Settlement Agreement after approval of the Competent Authority or Rejection of the proposed Settlement Agreement by the Competent Authority of BHEL.</p>
3	Secretarial expenses	<p>Rs 10,000/- (one time) for the whole case for Conciliation by a Sole Member IEC.</p> <p>Where Conciliation is by multi member Conciliators –Rs 30,000/- (one time)- to be paid to the IEC</p>

4	Travel and transportation and stay at outstation i) Retired Senior Officials of other Public Sector Undertakings (pay scale wise equivalent to or more than E-8 level of BHEL)	As per entitlement of the equivalent officer (pay scale wise) in BHEL.
	Others	As per the extant entitlement of whole time Functional Directors in BHEL.
Sl No	Particulars	Amount
		Ordinarily, the IEC Member(s) would be entitled to travel by air Economy Class.
5	Venue for meeting	Unless otherwise agreed in the agreement, contract or the Memorandum of Understanding, as the case may be, the venue/seat of proceedings shall be the location of the concerned Unit / Division / Region / Business Group of BHEL. Without prejudice to the seat/venue of the Conciliation being at the location of concerned BHEL Unit / Division / Region / Business Group, the IEC after consulting the Parties may decide to hold the proceedings at any other place/venue to facilitate the proceedings. Unless, Parties agree to conduct Conciliation at BHEL premises, the venue is to be arranged by either Party alternately.

24. The parties will bear their own costs including cost of presenting their cases/evidence/witness(es)/expert(s) on their behalf. The parties agree to rely upon documentary evidence in support of their claims and not to bring any oral evidence in IEC proceedings.
25. If any witness(es) or expert(s) is/are, with the consent of the parties, called upon to appear at the instance of the IEC in connection with the matter, then, the costs towards such witness(es)/expert(s) shall be determined by the IEC with the consent of the Parties and the cost so determined shall be borne equally by the Parties.
26. The other expenditures/costs in connection with the Conciliation proceedings as well as the IEC's fees and expenses shall be shared by the Parties equally.
27. Out of the lump sum fees of Rs 75,000/- for Sitting Fees, 50% shall be payable after the first meeting of the IEC and the remaining 50% of the Sitting Fees shall be payable only after termination of the conciliation proceedings in terms of para 22 hereinabove.
28. The travelling, transportation and stay at outstation shall be arranged by concerned Unit as per entitlements as per Serial No. 3 of the Table at para 23 above, and in case such arrangements are not made by the BHEL Unit, the same shall be reimbursed to the IEC on actuals limited to their entitlement as per Serial No. 4 of the Table at Para 23 above against supporting documents. The IEC Member(s) shall submit necessary invoice for claiming the fees/reimbursements.
29. The Parties shall keep confidential all matters relating to the conciliation proceedings. Confidentiality shall extend also to the settlement agreement, except where its disclosure is necessary for purposes of its implementation and enforcement or as required by or under a law or as per directions of a Court/Governmental authority/ regulatory body, as the case may be.
30. The Parties shall not rely upon or introduce as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the Disputes that is the subject of the Conciliation proceedings:

- a. Views expressed or suggestions made by the other party in respect of a possible settlement of the Disputes;
 - b. admissions made by the other party in the course of the Conciliator proceedings;
 - c. proposals made by the Conciliator;
 - d. The fact that the other Party had indicated his willingness to accept a proposal for settlement made by the Conciliator.
31. The Parties shall not present the Conciliator(s) as witness in any Alternative Dispute Resolution or Judicial proceedings in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
32. None of the Conciliators shall act as an arbitrator or as a representative or counsel of a Party in any arbitral or judicial proceeding in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
33. The Parties shall not initiate, during the Conciliation proceedings, any arbitral or judicial proceedings in respect of a Disputes that is the subject matter of the Conciliation proceedings except that a Party may initiate arbitral or judicial proceedings where, in his opinion, such proceedings are necessary for preserving his rights including for preventing expiry of period of limitation. Unless terminated as per the provisions of this Scheme, the Conciliation proceedings shall continue notwithstanding the commencement of the arbitral or judicial proceedings and the arbitral or judicial proceedings shall be primarily for the purpose of preserving rights including preventing expiry of period of limitation.
34. The official language of Conciliation proceedings under this Scheme shall be English unless the Parties agree to some other language.

Appendix I

FORMAT FOR SEEKING CONSENT FOR REFERRING THE DISPUTES TO CONCILIATION THROUGH IEC

To,

M/s. (Stakeholder's name)

Sub: Resolution of the Disputes through conciliation by Independent Expert Committee (IEC).

Ref: Contract No/MoU/Agreement/LOI/LOA& date _____.

Sir,

With reference to above referred Contract/MoU/Agreement/LOI/LOA, you have raised certain Disputes/claims. Vide your letter dated____ you have requested BHEL to refer the Disputes/claims to IEC for Conciliation.

We are enclosing herewith Format (3) for giving consent and the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. You are requested to give your unconditional consent to the said terms and conditions of the Scheme by returning the same duly sealed and signed on each page. On receipt of your consent, matter will be put to the Competent Authority for consideration and decision.

Please note that BHEL has also certain claims against you (if applicable). BHEL reserves its right to agree or not to agree conciliation of the said disputes through BHEL and this letter is being issued without prejudice to BHEL's rights and contentions available under the contract and law.

Yours faithfully,

Representative of BHEL

Appendix II

FORMAT FOR GIVING CONSENT BY CONTRACTOR/VENDOR/CUSTOMER/COLLABORATOR/CONSORTI UM PARTNERS FOR REFERRING THE DISPUTES TO CONCILIATION THROUGH IEC

To,

BHEL

.....

Sub: Resolution of Disputes through Conciliation by Independent Expert Committee (IEC).

Ref: Contract/MoU/Agreement/LOI/LOA No & date____

With reference to above referred contract, our following bills/invoices/claims submitted to BHEL are still unpaid giving rise to Disputes:

SL. no.	Claim Description	Bill submitted to BHEL (no. and date)	Amount of the bill/claim	Amount received from BHEL	Outstanding Amount

Accordingly we request you to kindly refer the Disputes in respect of above claims to IEC for Conciliation.

We hereby agree and give our unconditional consent to the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. We have signed the same on each page and enclosed it for your consideration.

Yours faithfully,

(Signature with stamp)

**Authorized Representative of Contractor
Name, with designation
Date**

Appendix III

STATEMENT OF CLAIMS/COUNTER CLAIMS TO BE SUBMITTED TO THE IEC BY BOTH THE PARTIES

1. Chronology of the Disputes
2. Brief of the Contract/MoU/Agreement/LOI/LOA
3. Brief history of the Disputes:
4. Issues:
5. Details of Clam(s)/Counter Claim(s):

SI. No.	Description of claim(s)/Counter Claim	Amount (in INR)Or currency applicable in the contract	Relevant contract clause

6. Basis/Ground of claim(s)/counter claim(s) (along with relevant clause of contract)

Note– *The Statement of Claims/Counter Claims may ideally be restricted to maximum limit of 20 pages. Relevant documents may be compiled and submitted along with the statement of Claims/Counter Claims. The statement of Claims/Counter Claims is to be submitted to all IEC members and to the other party by post as well as by email.*

Annexure-Y

Declaration of sister / common business / management units in same / similar line of business for the quoted items in this tender.

Bidder details:

NIT Reference:

Sl. No.	Name of Sister Concern / Common business / Management Units	Relationship with Bidder	Nature of Business with BHEL

signature and Seal for bidder

/ On Bidder's office letter pad /

Self-Declaration

Enquiry No.	1802400030
Enquiry Date	07.03.2024

In line with Government public procurement order Number P-45021/2/2017-B.E-II dated 15.06.2017, and further modified order dt. 28.05.2018 and 04.06.2020.

I / We hereby declare that I / We are a “Local Supplier” meeting the requirement of minimum local content (.....%) defined in the above government notification for the goods against above mentioned enquiry Number.

Details of location at which local value addition will be made is as follows:

Door No.	
Street / Address 1	
Street / Address 2	
District	
State	
Country	
PIN Code	

We also understand that the false declarations will be considered as breach of Integrity and liable for action.

For Company Name:

Seal:

Signature:

Date:

Place:

(Please fill all the yellow color field)

Letter head of CA/ Statutory auditor / Cost auditor (>Rs. 10 Cr value)

Ref:

Date:

To,

BHARAT HEAVY ELECTRICALS LIMITED,
HIGH PRESSURE BOILER PLANT,
24 BUILDING, BHEL,
TRICHY-620014.

Subject: - Certification regarding local content

Reference: Tender Enquiry No-.....

Name of Package:

Dear Sir,

We hereby certify that items of(package name).....for.....(Project Name/Rate Contract).....offered by M/s(bidder's name)..... having its registered works at has local content of%.

Further, M/s(bidder's name)..... meets the requirement of minimum local content in line with clause no..... of NIT no..... dated..... and the Public Procurement (Preference to Make in India), Order 2017 dated-15.06.2017, 28.05.2018 & 29.05.2019.

Thanking You.


For (CA/Cost Firm Name with FRN & Seal)

Chartered/Cost Accountants

(name of Member)

(Membership no.)

(UDIN no.)

 BHEL - TRICHY	THIRD PARTY NON-DISCLOSURE AGREEMENT	Doc.No. : ISMS-04/TP/011	
		Ver. No: 3.0	Rev. No: 00
		Date : 27 - 10 - 14	

THIRD PARTY NON-DISCLOSURE AGREEMENT

I, _____, on behalf of the _____ (Name of Company), acknowledge that the information received or generated, directly or indirectly, while working with BHEL, Trichy on contract is confidential and that the nature of the business of the BHEL, Trichy is such that the following conditions are reasonable, and therefore:

I warrant and agree as follows:

I, or any other personnel employed or engaged by our company, agree not to disclose, directly or indirectly, any information related to the BHEL, Trichy Without restricting the generality of the foregoing, it is agreed that we will not disclose such information consisting but not necessarily limited to:

- Technical information: Methods, drawings, processes, formulae, compositions, systems, techniques, inventions, computer programs/data/configuration and research projects.
- Business information: Customer lists, project schedules, pricing data, estimates, financial or marketing data,

On conclusion of contract, I, or any other personnel employed or engaged by our company shall return to BHEL, Trichy all documents and property of BHEL, Trichy, including: drawings, blueprints, reports, manuals, computer programs/data/configuration, and all other materials and all copies thereof relating in any way to BHEL, Trichy 's business, or in any way obtained by me during the course of contract. I further agree that I, or any others employed or engaged by our company shall not retain copies, notes or abstracts of the foregoing.

This obligation of confidence shall continue after the conclusion of the contract also.

I acknowledge that the aforesaid restrictions are necessary and fundamental to the business of the BHEL, Trichy and are reasonable given the nature of the business carried on by the BHEL, Trichy I agree that this agreement shall be governed by and construed in accordance with the laws of country.

I enter into this agreement totally voluntarily, with full knowledge of its meaning, and without duress.

Dated at _____, this ____ day of _____, 20____.

Name

Company

Signature

Integrity Pact (IP)

(a) IP is a tool to ensure that activities and transactions between the Company and its Bidders / Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

SL	IEM	Email
1.	Shri Otem Dai, IAS (Retd.)	iem1@bhel.in
2.	Shri Bishwamitra Pandey, IRAS (Retd.)	iem2@bhel.in
3.	Shri Mukesh Mittal, IRS (Retd.)	Iem3@bhel.in

(b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.

(c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.

Note:

No routine correspondence shall be addressed to the IEM (phone/post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) departments officials whose contact details are provided below.

Details of contact person(s): -

(1)

Name: Jayakishore Chukka

Deptt: MM/BOI

Address: 24 Building, BHEL, Trichy

Phone: 0431-2578083

Email: jayakishore@bhel.in

(2)

Name: Rajesh Kummar SB

Deptt: MM/BOI

Address: 24 Building, BHEL, Trichy

Phone: 0431-2574166

Email: sbrajesh@bhel.in

INTEGRITY PACT

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

_____, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for Supply of ABSORBER MIST ELIMINATOR and Mandatory Spares, Supervision for E & C and Performance Testing for Sagardighi and North Chennai projects

_____. The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), 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

1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a 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.

1.1.2 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 to 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 relation to the tender process or the contract execution.

1.1.3 The Principal will exclude from the process all known prejudiced persons.

1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions:

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
- 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any 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.
- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or 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.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Indian Penal Code (IPC) and Prevention of Corruption 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.
- 2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and will await their decision in the matter.

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 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 4 - Compensation for Damages

- 4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/ Bid Security.
- 4.2 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 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

Section 5 - Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 - Equal treatment of all Bidders/ Contractors / Sub-contractors

- 6.1 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors. In case of sub-contracting, the Principal contractor shall be responsible for the adoption of IP by his sub-contractors and shall continue to remain responsible for any default by his sub-contractors.
- 6.2 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section 7 - Criminal Charges against violating Bidders/ Contractors /Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 - Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. 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.
- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality in line with Non- disclosure agreement.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract 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.

- 8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.
- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter should be examined by the full panel of IEMs jointly as far as possible, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to CMD, BHEL, at the earliest. They may also send their report directly to the CVO and the Commission, in case of suspicion of serious irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.9 IEM should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the organization should be looked into by the CVO of the concerned organisation.
- 8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.
- 8.12 The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration

- 9.1 This Pact shall be operative from the date IP is signed by both the parties till the final completion of contract for successful bidder and for all other bidders 6 months after the contract has been awarded. Issues like warranty / guarantee etc. should be outside the purview of IEMs.
- 9.2 If any claim is made/ lodged during currency of IP, 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 the CMD, BHEL.

Section 10 - Other Provisions

- 10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.

Section 10 - Other Provisions

- 10.1 This Integrity Pact is subject to Indian Laws and exclusive jurisdiction shall be of the competent Courts as indicated in the Tender or Contract, as the case may be.
- 10.2 Changes and supplements as well as termination notices need to be made in writing.
- 10.3 If the Bidder(s)/ Contractor(s) is a partnership or a consortium or a joint venture, this Integrity Pact shall be signed by all partners of the partnership or joint venture or all consortium members.
- 10.4 Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of this Integrity Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders / contractors who have entered into this Integrity Pact with the Principal would be competent to participate in the bidding. In other words, entering into this Integrity Pact would be a preliminary qualification.
- 10.6 In the event of any dispute between the Principal and Bidder(s)/ Contractor(s) relating to the Contract, in case, both the parties are agreeable, they may try to settle dispute through Mediation before the panel of IEMs in a time bound manner. In case, the dispute remains unresolved even after mediation by the panel of IEMs, either party may take further action as the terms & conditions of the Contract. The fees/expenses on dispute resolution through mediation shall be shared by both the parties. Further, the mediation proceedings shall be confidential in nature and the parties shall keep confidential all matters relating to the mediation proceedings including any settlement agreement arrived at between the parties as outcome of mediation. Any views expressed, suggestions, admissions or proposals etc. made by either party in the course of mediation shall not be relied upon or introduced as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the dispute that is the subject of mediation proceedings. Neither of the parties shall present IEMs as witness in any Alternative Dispute Resolution or judicial proceedings in respect of the dispute that was subject of mediation.

C. Jayashree
JAYAKISHORE CHUKKA
 For & On behalf of the Principal / BOI
 Dy. Manager / Purchase / BOI
 (Office Seal)
Materials Management
Bharat Heavy Electricals Limited
Tiruchirappalli, Tamil Nadu - 620 014
 Place _____
 Date 30.01.2024

 For & On behalf of the Bidder/ Contractor
 (Office Seal)

Witness: *S.B. Rajesh Kumar*
 (Name & Address) **S.B. RAJESH KUMMAR**
Dy. Manager / Purchase / BOI
Materials Management
Bharat Heavy Electricals Limited
Tiruchirappalli, Tamil Nadu - 620 014

Witness: _____
 (Name & Address) _____

PART-I (No Deviation Certificate)
(To be given in bidder's letter pad)

Note: The following Declaration to be submitted on the bidder's Letter Head, duly signed & stamped and to be attached along with your Technical bid of the tender.

Tender Details: Supply ABSORBER MIST ELIMINATOR, Performance Testing and Mandatory Spares for SAGARDIGHI and NORTH CHENNAI Projects

Enquiry No.: **1802400030**

Enquiry Date: **07.03.2024**

I/We M/s.
have read and clearly understood all the Terms and conditions in Tender Schedule of and accordingly accept the same without any deviation what so ever.

- *I/ We unconditionally agree to all the tender conditions and no new conditions are imposed by us in the technical / price bid. I understand in the event of imposing any condition in the technical / price bid, such condition would be ignored by BHEL and only the prices will be considered for the purpose of evaluation".*

In case of any deviation (Technical or commercial) the same is mentioned below. (Bidders to please note deviations mentioned else where would not be considered and such deviations would be null and void)

Sl.No.	Document Reference	BHEL specification	Firms Alternative offer
TECHNICAL DOCUMENTS FOR SAGARDIGHI PROJECT			
1	FGD:ME:1731/Rev No:01	TECHNICAL PURCHASE SPECIFICATION FOR MIST ELIMINATOR	
2	ME-1731-001/REV.00	TYPICAL ARRANGEMENT OF MIST ELIMINATOR	
3	FGD:ME:8216/Rev No: 01	TECHNICAL PURCHASE SPECIFICATION FOR MIST ELIMINATOR	
4	ME-1731-001/REV.00	TYPICAL ARRANGEMENT OF MIST ELIMINATOR	
COMMERCIAL DOCUMENTS APPLICABLE FOR THIS TENDER			
	Annexure – A- Terms and Conditions	ACCEPTANCE OF TECHNO - COMMERCIAL TERMS AND CONDITIONS BY THE BIDDERS	
	ANNEXURE-B - SCHEDULE OF ITEMS	ANNEXURE-B - SCHEDULE OF ITEMS	

- *I/ We confirm that none of our group concern or affiliates etc., appears on the list of banned firms / companies by BHEL (list available on www.bhel.com) nor any of the Director / Partner / proprietor of bidder / such group concern or affiliate etc. are involved with such company.*
- *I/ We also declare that, we have not been suspended or black listed or issued with Show Cause Notice by BHEL- Trichy or any other BHEL Unit or any PSU/ Government organization.*
- *I/ We confirm that other than us, none of our group concerns or affiliates etc. are participating in the tender either directly or indirectly through any other agency under same proprietor / common director(s) / common partner(s).*
- *I/ We confirm that if any of the above statement / information furnished by us in this tender is found to be false/ fake at any stage of tender evaluation or during execution of contract, BHEL will have the right to initiate appropriate action including legal proceeds / termination of contract, recovery of damages, penalties etc. as deemed fit.*

(Contractor Signature with Seal)
Contractor Signature

Contractor Seal

BANK GUARANTEE FOR PERFORMANCE SECURITY

(Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s))

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY **IFSC**
AND MICR CODE

Dear Sirs,

1. In consideration of Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at _____¹ through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) (VENDOR CODE) with its registered office at _____² hereinafter referred to as the 'Vendor / Contractor / Supplier', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated³ valued at Rs.....⁴ (Rupees -----)/FC.....(in words.....) for⁵ (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Performance Security by way of a Bank Guarantee, equivalent to% (.... Percent) of the said value of the Contract to the Employer for the due performance of all the contractual obligations of the Vendor / Contractor / Supplier including warranty obligations
2. we,, (hereinafter referred to as the Bank), having registered/Head office at and inter alia a branch at being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer any sum or sums upto a maximum amount of Rs -----⁶ (Rupees -----) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.
3. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.
4. We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor / Contractor / Supplier in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

5. The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the Vendor / Contractor / Supplier shall have no claim against us for making such payment.

We thebank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of all the contractual obligations of the Vendor / Contractor / Supplier including satisfactory completion of the warranty period /obligations as per the terms of the Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

6. We.....BANK further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Vendor / Contractor / Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Vendor / Contractor / Supplier and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Vendor / Contractor / Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor / Contractor / Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

7. 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 Vendor / Contractor / Supplier and notwithstanding any security or other guarantee that the Employer may have in relation to the Vendor / Contractor / Supplier's liabilities.

8. This Guarantee shall remain in force upto and including.....⁷ and shall be extended from time to time for such period as may be desired by Employer.

9. This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Vendor / Contractor / Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.

10. Unless a demand or claim under this guarantee is made on us in writing on or before the⁸we shall be discharged from all liabilities under this guarantee thereafter.

11. Any claim or dispute arising under the terms of this document shall only be enforced or settled in the Courts at Tiruchirappalli.

12. We..... BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed..... ⁶
- b) This Guarantee shall be valid up to ⁷
- c) Unless the Bank is served a written claim or demand on or before (minimum 3 to 6 months from the expiry date) ⁸ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

13. We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

BANK EMAIL ID:

BANK PHONE NO:

AUTHORISED SIGNATORIES CELL PHONE NO:

BANK FAX NO:

¹ NAME AND ADDRESS OF EMPLOYER I.e Bharat Heavy Electricals Limited

² NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

³ DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

⁴ CONTRACT VALUE

⁵ PROJECT/SUPPLY DETAILS

⁶ BG AMOUNT IN FIGURES AND WORDS

⁷ VALIDITY DATE

⁸ DATE OF EXPIRY OF CLAIM PERIOD

Sl. No.	Name of the bank
1	State Bank of India
2	Canara Bank
3	IDBI Bank Limited
4	ICICI Bank Limited
5	HDFC Bank Limited
6	Axis Bank
7	IndusInd Bank Limited
8	Bank of Baroda
9	Exim Bank
10	Indian Bank
11	Punjab National Bank
12	Union Bank of India
13	Yes Bank Limited
14	RBL Bank Ltd.
15	Standard Chartered Bank
16	Indian Overseas Bank
17	Kotak Mahindra Bank Limited
18	Federal Bank Limited
19	Hongkong and Shanghai Banking Corporation Ltd