GMDC/_____ **Date: _____**

Letter of Award (LoA)

To,

_____

Email:

Kind attention:

Subject: Boiler and ESP Package for Overhaul of GMDC's 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat

Ref: RFP No:

Dear Sir / Madam,

With reference to the above subject and reference RfP, GMDC is pleased to award this LoA to your entity for Overhaul of Boiler and ESP at GMDC's 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat

Scope of work:

1. Responsibilities of your entity

The responsibilities of your entity as part of the Contract have been segregated into two key categories – services and supply. The terms of reference / scope of work have been detailed for each category below.

1.1. Scope of services

The scope of the Contract shall be providing end-to-end services for Overhaul of the Boiler and ESP both units of the Plant, as part of the Boiler and ESP package. Your entity shall ensure execution of the scope of work is done in accordance with best-in-class practices, standards of safety, and mutually agreed terms with the Owner.

Battery limits

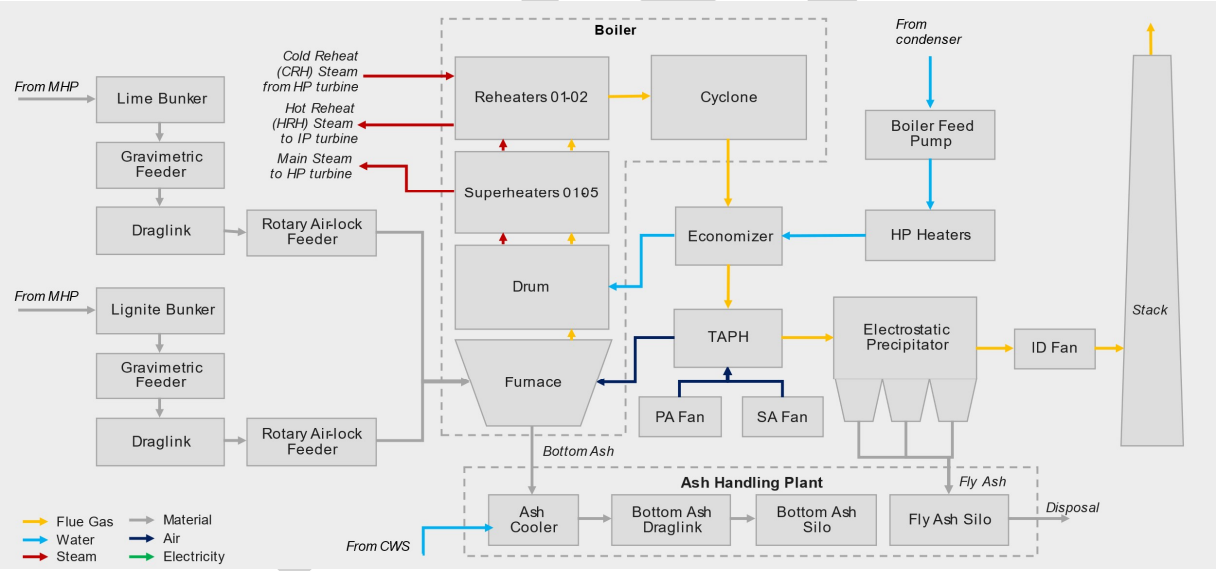
Your entity shall be responsible for maintenance and / or overhauling of all mechanical, electrical, and instrumentation equipment of the boilers and ESPs in Unit-1 and Unit-2, as part of the scope of work, as detailed in Section of this document. This shall include all equipment within the following circuits as part of the boiler and ESP systems, as detailed below:

1. Water and Steam Circuit: Starting from feed water regulatory valve and discharge of boiler feed pumps, up to main steam stop valve (MSSV) before HP turbine and reheater (RH) attemperator isolating valve
2. Combustion Air Circuit: Starting from suction filter of SA Fans, PA Fans, Ash Cooler Fans, FA Fans up to the furnace

3. Flue Gas Circuit: Starting from the furnace up to (and including) the chimney inlet, bellows, and the frame, including key systems such as TAPH, ID fans, etc.
4. Lignite Feeding System: Starting (and including) from the inlet of the lignite bunker up to the furnace, including the draglink conveyor, gravimetric feeder, the rotary air-lock feeder, etc.
5. Lime Feeding System: Starting (and including lime mill, lime conveying and storage system, needle gate valve) from the lime bunker up to the lignite rotary air lock feeder
6. Ash Handling System: Starting from the outlet of the furnace up to (and including) the ash rotary seal, including the ash drag link, ash cooler, ash cooler fan (starting from SA fan discharge), closed hot water circuit, and the PHE
7. Circulating Cooling Water Circuit: CCW lines for all fans and pumps, starting from the isolating valve in the inlet line to the isolating valve in the outlet line
8. Fuel Oil (HFO) Circuit: Starting from the fuel oil unloading station to the main boiler burner, including the long recirculation circuit
9. Diesel Oil (LDO) Circuit: Starting from the fuel oil unloading station to auxiliary boiler and the lime mill

Other equipment in the scope of this Package include:

10. Field Instruments: All field instruments within the circuits mentioned above, including wiring up to junction boxes
11. Auxiliary Boiler: Overhaul of the auxiliary boiler including associated equipment (e.g., pumps, fans, etc.)



Process flow diagram: Boiler and ESP

1.1.1. Pre-Overhauling activities

1.1.1.1. Detailed Overhaul planning

1. Your entity shall create a detailed consolidated 'Overhaul Execution Plan' for the Boiler and ESP package in collaboration with the PMC, focusing on sequencing of activities,

identification of interdependencies, and indicating clear milestones, in line with the timelines mentioned under "Duration of Contract" and Section 9.2 (Payment Milestones) of this document

2. The 'Overhaul Execution Plan' shall be used as the single source of truth for monitoring schedule compliance for your entity, i.e., deviations in actual timelines vis-à-vis planned timelines
3. The 'Overhaul Execution Plan' shall be at an equipment level, encompassing all activities including but not limited to dismantling, inspecting, cleaning, repairing, installation, commissioning, and testing
4. Your entity shall prepare appropriate Quality Assurance Plan (QAP) or Quality Inspection Plan (QIP) and Quality Control Plan (QCP) for execution of the Overhaul and shall get it reviewed by competent authority from the PMC and the Owner. Your entity shall apprise the Owner about the plans to enable frequent audits, and highlight potential concerns, if any
5. Your entity shall prepare Boiler Overhaul and ESP Retrofitting protocols indicating the sequence of activities to be conducted along with set of readings to be measured before and after overhauling and retrofitting

1.1.1.2. Owner readiness assessment and support

1. Your entity shall, in collaboration with the PMC, conduct audits and physical verification of existing inventory at the Plant to identify the equipment and associated spares and material readily available to be utilized during the Overhaul.
2. Your entity will assess the availability of required spares at the Plant. They will conduct a gap analysis and incorporate the additional material to be procured in the 'Procurement Register' (detailed in Section 1.2.1) to ensure optimal Procurement and consumption of material
3. Your entity shall assess the workshop equipment prior to the start of the Overhaul. The details of the equipment available in the workshop as on date has been summarized below:

S. No	Description	Make	Status
1	Precision Lathe (12 feet)	Panther	Working
2	Lathe machine (3 feet)	Esteem	Working
3	Piller Drilling Machine	Eifco	Working
4	Rough grinder	Eifco	Working
5	Power Hacksaw	Eifco	Working
6	Radial Drill Machine	HMT	Working

4. The Overhaul Plan created by your entity shall mention requirement for equipment from the GMDC workshop. Your entity shall create an equipment usage plan in collaboration with PMC incorporating all interdependencies

5. Your entity shall be given access to the workshop equipment as per availability and Overhaul plan indicating requirement of workshop equipment. Your entity shall coordinate with the PMC to access the existing equipment and ensure no impact on execution timelines. If your entity requires additional equipment to deliver the services defined under scope of services of this document, the same shall be in the scope of your entity
6. Your entity shall arrange and depute necessary operators as required for operating the workshop equipment

1.1.1.3. Statutory approvals

Your entity shall obtain, on behalf of the owner, all necessary statutory approvals from Inspection Authorities, IBR, or other government authorities, as may be required, as per Applicable Laws at its own cost. Further, your entity shall coordinate and arrange for hydro testing of the boilers as per IBR requirements, during the course of the Overhaul.

All necessary documentation prepared and / or obtained for such statutory approvals shall be submitted to the Owner for review prior to submitting for approvals to relevant authorities. Coordination and liaising with competent authority are in the scope of your entity.

1.1.1.4. Workforce deployment

1. Your entity shall deploy a 'Boiler Package Leader' with strong technical expertise and experience of over 12 years, with prior experience in Overhauling, having successfully completed at least 2 EPC / ETC / R&M / Overhauling of CFBC Boilers in the last 12 years, in coal or lignite-based thermal power plants in India
2. Further, your entity shall also deploy an 'ESP Package Leader' with strong technical expertise and experience of over 12 years, with prior experience in EPC / ETC / Retrofitting and commissioning of ESP units as per the latest environmental regulations (new emission standards vide notification no. S.O. 3305(E) dated 07th December 2015)
3. The 'Boiler Package Leader' and 'ESP Package Leader shall coordinate with the PMC and the Owner on all matters pertaining to the execution of the Overhaul
4. The minimum requirements for your entity to ensure coverage of all equipment within the battery limits has been summarized below:

S. No	Member	Role	Minimum requirement	Minimum Qualification
1	Boiler Package Leader	Overall Boiler coordinator	1	Graduation in Mechanical / Electrical / Instrumentation / or equivalent Engineering (BE / B.Tech) with at least 12 years' experience

S. No	Member	Role	Minimum requirement	Minimum Qualification
2	ESP Package leader	Overall ESP coordinator	1	Graduation in Mechanical / Electrical / Instrumentation / or equivalent Engineering (BE / B.Tech) with at least 12 years' experience
3	Mechanical Lead	Supervisor for mechanical activities	1	Graduation in Mechanical / Electrical / Instrumentation / or equivalent Engineering (BE / B.Tech) with at least 7 years' experience
4	Electrical Lead	Supervisor for electrical activities	1	
5	Instrumentation Lead	Supervisor for C&I activities	1	
6	Safety Lead	Supervisor for ensuring EHS (environment, health, and safety) activities	1	
7	Quality Head	Supervisor to ensure adherence with Quality Assurance Plan	1	Graduation in Mechanical / Electrical / Instrumentation / or equivalent Engineering (BE/B.Tech) with at least 7 years' experience

5. Your entity shall ensure that all deployed personnel are available at the Plant at all times during the execution of the Overhaul. The 'Boiler Package Leader' and 'ESP Package Leader' shall be present at the owner's corporate office in Ahmedabad for progress review and other meetings that may be organized during the course of the Overhaul, as needed. Your entity shall arrange for their own accommodation for representatives travelling to Ahmedabad for such meetings
6. Your entity shall submit details of all deployed personnel for execution of the Overhaul to the PMC prior to deployment and ensure they are in line with Contractual requirements
7. Your entity shall arrange for a sufficient number of IBR certified welders per day (with prior experience in welding of ASTM SA-106 Gr.B / SA-210 / SS304 / SS316 tubes) and other resources (e.g., fitters, grinders, etc.) for performing all welding activities and other tests as part of the Boiler and ESP package, as needed

8. Your entity should deploy sufficient workforce for simultaneous work on both the Boilers and ESPs at the Plant, in assurance with the 'Detailed Overhaul Plan', as detailed in Section 1.1.1.1 of this document
9. Your entity shall depute sufficient manpower for HR, Admin, Store management and HSE, as needed

1.1.1.5. Infrastructure arrangement

1. While the Owner will arrange for the accommodation and food for your entity's personnel deployed in the Plant on the basis of availability and on a chargeable basis, in case infrastructure is not available, your entity shall be responsible for arranging the same for the entire course the Overhaul.
2. Your entity shall maintain a dedicated shed for conducting necessary works including but not limited to fabrication, repair, storage of material, etc. The Owner shall provide access to the available facilities and workshop in the Plant with prior written consent, as per availability
3. For timely and successful completion of the Overhaul, if new set of skilled operators are required for workshop equipment, your entity shall arrange the same at its own cost

1.1.1.6. Structural modifications

Your entity shall be responsible for necessary structural modifications including supply, fabrication, and erection of any new structure to support piping, equipment, and provision of any additional platform if required for access to new equipment, or any other structural modification works required for execution of the Overhaul to aid the completion of the works defined in Section 1.1.2 of this document.

1.1.1.7. Hanger inspection and servicing

1. Your entity shall inspect all installed hangers, spring supports, flexible supports, rigid supports, etc. as per the battery limits defined in Section 1.1, and assess their load bearing capacities, prior to commencement of Overhaul. A detailed list of hangers available at the Plant has been appended in Annexure 4
2. Your entity shall replace all damaged / unsuitable / non-functional hangers, supports, and associated components, as needed for the execution of the Overhaul
3. Your entity shall be responsible for inspecting and repairing the existing boiler supports. As per design, the Boilers are top supported, however temporary fixed supports have been provided. Your entity shall replace all fixed supports with top supports as per design
4. Your entity shall be responsible for cold setting and hot setting of the hangers post commissioning and stabilization of the Boilers as per design

1.1.1.8. Scaffolding and platforms

Your entity's scope shall include supply of all scaffolding, and / or platforms, as may be required for repair / Overhaul and commissioning. These items shall be specifically brought

to the Plant solely for repair / Overhaul purpose and if no more needed for regular maintenance of the equipment, can however, be taken back by your entity after completion of the work at the Plant.

1.1.1.9. Coil / Tube pulling equipment

Your entity shall be responsible for all coil / tube pulling arrangements, coil / tube supporting arrangements, required tools, chain blocks, pull lifts, slings, channels, and accessories required for the execution of the Overhaul.

1.1.1.10. Welding equipment

Your entity shall be responsible for arranging all welding machines, grinding machines, accessories for welding, cutting, grinding, along with consumables like 99.99% pure Argon gas, LPG, Oxygen, Acetylene, purging paper, grinding wheels, filler wires, welding rods, and other accessories required for the execution of the Overhaul.

Your entity shall arrange for welding rods of the following make only, as per IBR requirements, for welding of IBR lines. Copies of the approval certificates, obtained from the Director of Boiler, having validity for that batch of welding rods shall be furnished by your entity to the PMC and the Owner, including the Manufacturer's test certificate indicating chemical composition and mechanical properties of the rods.

S. No	Specification	Rods to be used
1	Stainless steel Filler wire for 347H of size: 2.4 x 1000mm. AWS ER 347 stainless steel welding electrode of size: Dia. 2.5 / 3.15 mm conforming to AWS: E-347 Specification: 5.4	Bohler Thyssen/ Bohler/ Metrode (For SA 213 TP 347H Tube welding)
2	Filler wire AWS: ER 90S-B9, Size: 2.4 x 1000mm; Dia. 2.5/3.15mm Conforming to AWS E 9015-B9; SFA 5.5	BOHLER / METRODE. (For SA213-T91 Tube welding)
3	SS Welding Electrode AWS A5.4E309-16 OF SIZE: 2.5/3.15/3.20mm DIA	D&H SECHERON / ADOR / BOHLER / METRODE. (For 253 MA connector plate to SS pin welding)
4	SS Welding Electrode AWS A5.4E310 S OF SIZE:2.5/3.15/3.20mm DIA	D&H SECHERON / ADOR / BOHLER / METRODE. (For Insert plate welding)
5	Welding electrode E NiCrFe-3 DIA. 2.5/3.15mm	D&H SECHERON / ADOR / BOHLER / METRODE. (For SS connector pin welding with T91 pad)
6	Dia. 2.5 mm Conforming to AWS E	BOHLER

S. No	Specification	Rods to be used
	9015-B9; SFA 5.5	(For SA213-T91 Tube welding)

1.1.1.11. Cranes

1. Since the Overhauling and retrofitting will be conducted on both Boilers and ESPs simultaneously, your entity shall arrange for required cranes with skilled operator in the Boiler and/or ESP area, as required
2. Your entity shall be responsible for load testing and certification of cranes along with qualified crane operators available at the Plant prior to the start of the Overhaul, as applicable

1.1.1.12. Air compressors

Since the Overhauling and retrofitting will be conducted on both Boilers and ESPs simultaneously, your entity shall arrange for portable air compressors for carrying out the works during the shutdown, as needed. Your entity shall arrange suitable cables, terminations/ joints for extending power from the existing source/ socket to portable compressors/ other power machines.

1.1.1.13. Consumables for Overhauling

Your entity shall be responsible for ensuring availability of sufficient quantities of all consumables for the Overhauling and retrofitting of Boiler and ESP Further, your entity shall also ensure safe disposal of sewage and other wastes, as necessary, to ensure safe and clean operations.

1.1.1.14. Dismantling of existing equipment

1. Your entity shall be responsible for dismantling of existing equipment prior to the initiation of the Overhaul, as needed, including but not limited to the Boiler and ESP piping, insulation, refractory, supports, and other components
2. Your entity shall prepare a checklist for dismantling and list of readings to be taken at the time of dismantling and submit to competent authority from the PMC and the Owner for review
3. Your entity shall submit a floor plan for storing the dismantled Boiler and ESP components and submit it to the PMC for approval. Your entity shall ensure the components are appropriately stored in the area, as per the floor plan approved by the PMC, during the course of the Overhaul

1.1.1.15. Safety arrangements

1. Your entity shall ensure the personnel deployed in the Plant adhere to the appropriate health, safety, and environment (HSE) requirements at the time of deployment. This will

include medical tests required, if any, among other requirements to be aligned with the Plant HSE team

2. Your entity shall make own arrangement for proper electrical grounding of all systems, supplied by him as required by the system design. All required accessories including grounding cables are also included in your entity's scope
3. Safe power supply and illumination for confined places shall be arranged by your entity. Any illumination work necessary to fulfill the scope of services defined in this RfP shall be carried out by your entity prior to the start of other work
4. A single point electrical supply of 415V, 32/63 Amp 3 phase and single point electrical supply of 230V, 16 Amp single phase power supply point from nearest available healthy source shall be supplied to your entity by the Owner, free of cost. Your entity shall be responsible for the provision of cables for extending power to its apparatus
5. Your entity shall be solely responsible for ensuring the safety of the adjacent equipment / foundations and of the existing supporting structures. The Overhauling work by your entity shall be carried out in such a manner that no damage is caused to existing equipment / foundations / structure and all precautions, including strengthening of existing structures, as may be necessary, shall be taken by your entity to ensure safety of existing Plant / equipment / foundation / structures

1.1.1.16. Permits

1. Your entity shall obtain and maintain in effect all applicable Contractor permits required in connection with your entity's performance of its obligations hereunder, including but not limited to licenses to permit your entity to do business in the jurisdictions where the work is to be performed, design, engineering, procurement, fabrication, construction, erection, testing and commissioning, start-up testing, tests before taking-over, export, import, and other applicable permits required to move, transport, and deliver material / equipment to and fro from the Plant
2. Your entity shall obtain all necessary Contractor and Construction permits. If your entity at any time becomes aware, whether as a result of notice from Owner or otherwise, of any applicable permit not obtained by him, your entity shall promptly give notice thereof to Owner and your entity shall be responsible for obtaining such applicable Permits
3. Your entity shall provide support to the owner in obtaining necessary Owner's permits, including but not limited to the following activities:
    i. Overall co-ordination of permitting requirements
    ii. Attendance at meetings with Owner and third parties designated by Owner
    iii. Preparation of permit applications or, as applicable, application to transfer permits to the Owner
    iv. Assistance in preparation of responses to inquiries by governmental instrumentalities/ agencies
    v. Assistance in presentations at hearing of governmental instrumentalities / agencies
    vi. Provision of all available information and documents required by Owner in connection with obtaining any Owner Permits; and

vii. Such other services as Owner may request from time to time required for Owner permits

1.1.2. Overhauling activities (Boiler)

Your entity shall prepare a comprehensive list of activities to be undertaken during the Overhaul post completion of inspection of the Boiler, as part of the 'Overhaul Execution Plan', detailed in Section 1.1.1.1 of this document.

1.1.2.1. Measurement of parameters

Your entity shall prepare a list of all parameters to be measured prior to initiation of the Overhaul and post completion of the Overhaul. Your entity shall validate the list with competent authority from the Owner and the PMC and obtain approvals prior to initiation of the Overhaul. For measurement of the parameters, your entity shall use the existing instrumentation installed at the Plant and highlight to the PMC and the Owner in case of any issues.

Your entity shall be responsible for measurement of all essential parameters, prior to overhauling of the Boiler, while dismantling as per Section 1.1.1.14. Your entity shall maintain a log of all the readings to be furnished to the competent authority from the PMC and the Owner

Your entity shall ensure that the readings observed post inspection, maintenance, and assembly of the Boiler are at par or better than the readings measured prior to dismantling. In case of deviations, your entity shall furnish appropriate documental evidence justifying the deviations. The desired outcomes have been incorporated in Section 5 of this document.

1.1.2.2. Dismantling and cleaning

Your entity shall be responsible for dismantling of the Boiler components, storage of dismantled components in the areas earmarked by the PMC, and cleaning of the equipment with appropriate tools and safety precautions, prior to inspection of the components.

1.1.2.3. Overhaul plan

Your entity shall be responsible for performing comprehensive Overhaul of the Boiler. The list of activities to be carried out, across all key components, have been detailed below as Plan 1 to 16. The key activities across all plans have been classified into two categories, as per the following definitions:

Category 1: Services required across key components to be undertaken as part of the Overhaul. Any additional services and procurement of associated material (i.e., not detailed as part of the Contract) for components classified as Category A identified during inspections post the initiation of the Overhaul, shall be notified to competent authority from the PMC and the Owner, and shall go through the 'Rate Settlement Mechanism', as detailed in Section 4 of this document.

Category 2: Services required for replacement of tubes and application of refractory across the boilers as per tentative quantities defined in Annexure 2. Services required for additional quantities of tubes or refractory shall be notified to the competent authority from the PMC and the Owner and shall go through the 'Quantity Variance Mechanism' defined in Section 3 of this document.

Plan 1: Auxiliary Boiler

The key activities to be executed by your entity for repair / overhaul of the auxiliary boiler shall include, but not be limited to, the following. The indicative list of spares to be procured for the auxiliary boiler have been detailed in Annexure 2, Plan 1.

Further, your entity shall prioritize the procurement and execution of the overhaul of the auxiliary boiler (as per timelines defined under Section "Duration of the Contract"), to ensure successful completion prior to shutdown of the units.

Component	Activity	Unit	Cat 1	Cat 2
Tubes	– Cutting and removal of old tubes, supply, installation, and commissioning of new tubes in the waterwall (1264 Nos) and superheater panel (54 Nos) as per the specifications detailed in Annexure 2, Plan 1, including the following: – Non-destructive testing of new welded joints – Leak test – Hydro test up to 32 kg/m^2 – Arrest leakages – Submission of test certificates for MOC of tubes to the Owner	Common	✓	
Drum	– Drum surface preparation for new tube installation – Drum level checking and correction – Replacement of drum vent line (supply of drum vent line in Owner's scope)	Common	✓	
Baffle plates	– Supply, installation, and commissioning of baffle plates as per the specifications detailed in Annexure 2, Plan1	Common	✓	
Cover plates	– Cutting and removal of cover plates and breaking of refractory – Cover plate welding and cladding application	Common	✓	
Insulation and coils	– Supply and apply insulation and coils across the Auxiliary Boiler as per specifications detailed in Annexure 2, Plan 1	Common	✓	
Valve	– Supply and apply gate valve at Start up vent and MS Line	Common	✓	
Refractory	– Installation of brick lining and	Common		✓

Component	Activity	Unit	Cat 1	Cat 2
	application of refractory at burner mouth			
Field instruments	– Inspection, testing, and calibration of existing field instruments associated with the Auxiliary Boiler – e.g., flow control valves, pressure gauges, thermocouples, etc.	Common	✓	
	– Removal and re-installation of all field instruments post testing and calibration	Common	✓	
Hydro testing	– Collaboration with relevant authority from IBR for inspection, and hydro testing of the Auxiliary Boiler, prior to initiation of operations and shutdown of the Plant	Common	✓	

Plan 2: Ash handling system

The key activities to be executed by your entity for repair / overhaul of the ash handling system shall include, but not be limited to, the following. The indicative list of spares to be procured for the ash handling system have been detailed in Annexure 2, Plan 2.

Component	Activity	Unit	Cat 1	Cat 2
Bottom ash draglink	– Supply, replacement, and commissioning of bottom ash draglink	Unit 1 and 2	✓	
Ash cooler	– Supply and install MS plates, SS310 plates, and baffle plate assembly as per specifications in Annexure 2, Plan 2	Unit 1 and 2	✓	
	– Inspection and cleaning of nozzles	Unit 1 and 2	✓	
	– Inspection and replacement of liner plate	Unit 1 and 2	✓	
	– Inspection of L-valve refractory and repair if required	Unit 1 and 2	✓	
	– Dismantling of air dock feeder and inspection of internals replacement/repair if required	Unit 1 and 2	✓	
Ash cooler recirculation bellow	– Supply and install non-metallic bellows and MS plates as per specifications in Annexure 2, Plan 2	Unit 1 and 2	✓	
Ash cooler sea water line	– Supply and install SS 316L and MS/GI pipelines for sea water into ash cooler	Unit 1 and 2	✓	
Ash rotary seal	– Supply and replace ash rotary seal	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
Ash draglink conveyer	– Supply and replace chain link and flight	Unit 1 and 2	✓	
	– Supply of spares for ash draglink as per Annexure 2, Plan 2	Unit 1 and 2	✓	
Refractory	– Supply and apply LCC50, 11 Li, and LCC 80 GN refractory as per Annexure 2, Plan 2	Unit 1 and 2		✓

Plan 3: Non-pressure parts (Boiler)

The key activities to be executed by your entity for repair / overhaul of the Boiler non-pressure parts shall include, but not be limited to, the following. The indicative list of spares to be procured for the Boiler non-pressure parts have been detailed in Annexure 2, Plan 3.

Component	Activity	Unit	Cat 1	Cat 2
Loop seal bellow	– Supply and replace metallic bellows	Unit 1 and 2	✓	
Burners	– Inspect and repair burner tips and lance (long and short), replace if needed	Unit 1 and 2	✓	
Level gauge	– Inspect and clean level gauge glasses, replace if needed	Unit 1 and 2	✓	
Plate-type heat exchangers	– Inspect EPDM gaskets, studs with double nuts for PHE, replace if needed	Unit 1 and 2	✓	
Refractory	– Removal of existing refractory in the boilers	Unit 1 and 2	✓	
	– Supply and apply LCC 80 / LCC 80 GN / 11 Li refractory for loop seal return leg and syphon seal	Unit 1 and 2		✓

Plan 4: Pressure parts (Boiler)

The key activities to be executed by your entity for repair / overhaul of the Boiler pressure parts shall include, but not be limited to, the following. The indicative list of spares to be procured for the Boiler pressure parts have been detailed in Annexure 2, Plan 4.

Component	Activity	Unit	Cat 1	Cat 2
Furnace	– Supply and replace furnace nozzles, waterwall, evaporator bottom tubes as per specifications detailed in Annexure 2, Plan 4	Unit 1 and 2	✓	
	– Build up removal and tube coating for	Unit 1	✓	

Component	Activity	Unit	Cat 1	Cat 2
	tubes in RTZ area	and 2		
	– Inspect, clean, and/or repair screen tubes with protectors, replace if needed	Unit 1 and 2	✓	
	– Inspect, supply, and replace furnace bed tubes, furnace tubes, evaporator tubes, evaporator intermediate wall tubes, superheater tubes, and reheater tubes as per observations identified during the RLA and specifications detailed in Annexure 2, Plan 4	Unit 1 and 2		✓
	– Implement observations identified as part of Boiler RLA	Unit 1 and 2		✓
Drum	– Open manholes and inspect	Unit 1 and 2	✓	
	– Dismantle and remove drum internals	Unit 1 and 2	✓	
	– Clean and inspect drum internals	Unit 1 and 2	✓	
	– Clean drum inside surface area	Unit 1 and 2	✓	
	– Replace damaged internals and fasteners – Assemble drum internals	Unit 1 and 2	✓	
	– Change manhole gasket and Box-up	Unit 1 and 2	✓	
	– Conduct hydro testing	Unit 1 and 2	✓	
2nd pass	– Supply and replace 2nd pass inlet bellow	Unit 1 and 2	✓	
	– Inspect, supply, and replace economizer section tubes, 2nd pass upper hanger tubes (SH1), 2nd pass lower hanger tubes (SH2), front wall tubes (SH1), LH/RH side wall tubes (SH2), rear wall tubes (SH3), superheater (SH3, SH5) tubes, and reheater (RH1) tubes as per observations identified during the RLA and specifications detailed in Annexure 2, Plan 4	Unit 1 and 2		✓
	– Supply and apply insulation and aluminum coil as per specifications detailed in Annexure 2, Plan 4	Unit 1 and 2	✓	
	– Open all manholes	Unit 1 and 2	✓	
	– Clean heating surface with hot water / wire brush	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	– Inspect heating surface for bulging/ warping / erosion / overheating etc.	Unit 1 and 2	✓	
	– Check binders, lugs, etc. for super heater / reheater coils	Unit 1 and 2	✓	
	– Inspect, clean, and reweld manhole plates	Unit 1 and 2	✓	
	– Hydro jetting of 2nd pass	Unit 1 and 2	✓	
	– Box-up post inspection, rectification, and installation of new components	Unit 1 and 2	✓	
	– Conduct hydro testing	Unit 1 and 2	✓	
Economizer / LTSH	– Open all manholes	Unit 1 and 2	✓	
	– Clean heating surface with hot water / wire brush	Unit 1 and 2	✓	
	– Clean hoppers and discharge pipe and check supports	Unit 1 and 2	✓	
	– Box-up post inspection, rectification, and installation of new components	Unit 1 and 2	✓	
	– Conduct hydro testing	Unit 1 and 2	✓	
RTZ area	– Supply and replace RTZ area tubes as per specifications detailed in Annexure 2, Plan 4	Unit 1 and 2	✓	
Pipelines	– Supply and apply insulation and aluminum coil as per specifications detailed in Annexure 2, Plan 4	Unit 1 and 2	✓	
Soot blower	– Supply and replace soot blowers for TAPH	Unit 1 and 2	✓	
	– Supply and replace soot blower for HRSB	Unit 1 and 2	✓	
	– Supply of lance tubes for soot blowers	Unit 1 and 2	✓	
	– Lubrication of soot blower (oil/grease), as needed	Unit 1 and 2	✓	
	– Supply of spares for LRSB, HRSB, rotary soot blowers	Unit 1 and 2	✓	
	– Servicing and repair of SBV head assembly, with checks for erosion of seat/disc/stem	Unit 1 and 2	✓	
	– Clean and inspect rack/pinion assembly for wear and damage check alignment	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	and lubricate			
	– Service rotary/traverse gearboxes	Unit 1 and 2	✓	
	– Inspect S.B. tube for crack/damage and clean nozzle	Unit 1 and 2	✓	
	– Replace Swivel tube bushing if required	Unit 1 and 2	✓	
	– Service traveling carriage assembly. Dismantle and inspect work, worm gear and bearings	Unit 1 and 2	✓	
	– Service power pack assembly	Unit 1 and 2	✓	
	– Dismantle clutch assembly for free and easy operation	Unit 1 and 2	✓	
	– Check chain tension. Service actuating lever and striking bolt etc.	Unit 1 and 2	✓	
	– Adjust limit switches during trial run for correct advance/retract	Unit 1 and 2	✓	
SWAS	– Supply and replace primary SWAS coolers for samples	Unit 2	✓	
	– Install MS lines for SWAS coolers	Unit 1 and 2	✓	
Air lines	– Inspect, supply, and replace 50 NB air lines across the furnace / 2nd pass	Unit 1 and 2	✓	
Refractory	– Remove existing refractory in the boilers	Unit 1 and 2	✓	
	– Supply and apply LCC 50 refractory of LH/RH sides, rear, and front walls	Unit 1 and 2		✓

Plan 5: Cyclone

The key activities to be executed by your entity for repair / overhaul of the cyclone shall include, but not be limited to, the following. The indicative list of spares to be procured for the cyclone have been detailed in Annexure 2, Plan 5.

Component	Activity	Unit	Cat 1	Cat 2
Cyclone	– Supply and refurbishment of MS plates cylindrical and in conical area for the cyclones – Supply and apply brick lining for the cyclone refractory – Supply and apply insulite across the cyclone	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
Vortex	– Supply and refurbishment of 10 mm SS310 and 8 mm MS plates for the shell – Supply and install anchors across the vortex	Unit 1 and 2	✓	
Bellows	– Supply and replace inlet and outlet bellows in the cyclone as per specifications detailed in Annexure 2, Plan 5	Unit 1 and 2	✓	
Refractory	– Remove existing refractory in the cyclones	Unit 1 and 2	✓	
	– Supply and apply refractory for top roof, inlet long wall, inlet short wall, inlet top wall, shell, COD, cyclone outlet, and cyclone downcomer as per specifications detailed in Annexure 2, Plan 5 – Supply and apply mortar for the shell – Supply and install anchors for refractory, shell, and furnace	Unit 1 and 2		✓
Insulation	– Supply and install aluminum sheet and insulation material for the shell	Unit 1 and 2	✓	

Plan 6: Dampers and gates

The key activities to be executed by your entity for repair / overhaul of dampers and gates shall include, but not be limited to, the following. The indicative list of spares to be procured for the dampers and gates have been detailed in Annexure 2, Plan 6.

Component	Activity	Unit	Cat 1	Cat 2
ID fan inlet and outlet dampers	– Supply and replace guillotine dampers for ID fan inlet and outlet – Supply and replace seal strips for dampers at ID fan inlet and outlet	Unit 1 and 2	✓	
PA and SA fan control dampers	– Supply and replace bearings for PA and SA fan control dampers	Unit 1 and 2	✓	
Guillotine gates	– Supply and replace guillotine gates for ID fans	Unit 1 and 2	✓	
General activities	– Servicing of actuators. Replacement of worn-out parts.	Unit 1 and 2	✓	
	– Checking/repair or replacement of gates/ damper leaves/shaft and bearings etc.	Unit 1 and 2	✓	
	– Repack glands with new packing	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	– Checking of seal airline system	Unit 1 and 2	✓	
	– Check and ensure smooth operation of dampers/gates. Check and calibrate damper position marking.	Unit 1 and 2	✓	

Plan 7: Ducts

The key activities to be executed by your entity for repair / overhaul of ducts shall include, but not be limited to, the following. The indicative list of spares to be procured for the ducts have been detailed in Annexure 2, Plan 7.

Component	Activity	Unit	Cat 1	Cat 2
Fan ducts	– Supply and install fan ducts for PA, SA, and ID fans as per specifications in Annexure 2, Plan 7	Unit 1 and 2	✓	
Insulation	– Supply and install insulation material for the PA, SA, and ID fans as per specifications in Annexure 2, Plan 7	Unit 1 and 2	✓	
Coils	– Supply and install Aluminum coil for cladding for the PA, SA, and ID fans as per specifications detailed in Annexure 2, Plan 7	Unit 1 and 2	✓	
Bellows	– Supply and install ID outlet and suction bellow	Unit 1 and 2	✓	
General activities *(across ducts)*	– Cleaning/inspection/repair of duct	Unit 1 and 2	✓	
	– Check all safety explosion rupture sheets provided in the duct	Unit 1 and 2	✓	
	– Check and repair duct internal support pipes and stiffeners	Unit 1 and 2	✓	
	– Cleaning and inspection of TAPH	Unit 1 and 2	✓	
	– Cleaning/inspection/repair or replacement of expansion joint	Unit 1 and 2	✓	
	– Painting of duct inside as required	Unit 1 and 2	✓	
	– Inspection of nonmetallic expansion joints of PA Wind box	Unit 1 and 2	✓	
	– Repair of crack in wind box ducts	Unit 1 and 2	✓	

Plan 8: Fans

The key activities to be executed by your entity for repair / overhaul of the fans shall include, but not be limited to, the following. The indicative list of spares to be procured for the fans have been detailed in Annexure 2, Plan 8.

Component	Activity	Unit	Cat 1	Cat 2
SA fans	– Cleaning and inspection of impeller assembly.	Unit 1 and 2	✓	
	– Servicing and replacement of blade bearings, sealing elements etc. Adjustment of aerofoil	Unit 1 and 2	✓	
	– Check position and fixation of Compensating weights.	Unit 1 and 2	✓	
	– Servicing of guide vanes	Unit 1 and 2	✓	
	– Servicing of Servomotor	Unit 1 and 2	✓	
	– Inspection/servicing or replacement of fan bearings	Unit 1 and 2	✓	
	– Checking/repair of suction/discharge duct	Unit 1 and 2	✓	
	– Assembly of fan with specified clearances as per maintenance Q.A. Sheet.	Unit 1 and 2	✓	
	– Alignment of fan and coupling with motor	Unit 1 and 2	✓	
	– Servicing of lube oil pumps.	Unit 1 and 2	✓	
	– Cleaning of L.O. tank/filters/piping/valves etc. and repair/replacement of damaged parts	Unit 1 and 2	✓	
	– Cleaning and hydro test of L.O. Coolers	Unit 1 and 2	✓	
	– Servicing of C.W. piping & valves.	Unit 1 and 2	✓	
	– Alignment of L.O. pump and coupling with motor	Unit 1 and 2	✓	
	– Rebabbitting of bearing	Unit 1 and 2	✓	
	– Supply of suction silencer, impeller, and shafts as per specifications in Annexure 2, Plan 8	Unit 1 and 2	✓	
	– Reconditioning of fan	Unit 1 and 2	✓	
	– Trial run and re-commissioning of L.O.	Unit 1	✓	

Component	Activity	Unit	Cat 1	Cat 2
	system	and 2		
	– Trial run of fan and dynamic balancing	Unit 1 and 2	✓	
PA fans	– Rebabbitting of bearing	Unit 1 and 2	✓	
	– Supply of suction silencer, impeller, and shaft as per specifications in Annexure 2, Plan 8	Unit 1	✓	
	– Check impeller weld joints by DPT for cracks	Unit 1 and 2	✓	
	– Servicing of regulating vanes	Unit 1 and 2	✓	
	– Servicing of guide vane actuator and lubrication of linkage etc.	Unit 1 and 2	✓	
	– Checking/repair of suction/discharge duct	Unit 1 and 2	✓	
	– Assembly of fan with specified clearances as per maintenance Q.A. sheets.	Unit 1 and 2	✓	
	– Alignment of fan and coupling with motor	Unit 1 and 2	✓	
	– Servicing of lube oil pump	Unit 1 and 2	✓	
	– Cleaning and repair of L.O. tank/filters/piping/valves/ etc.	Unit 1 and 2	✓	
	– Cleaning and hydro test of L.O. Coolers	Unit 1 and 2	✓	
	– Servicing of C.W. Piping & Valves.	Unit 1 and 2	✓	
	– Alignment of L.O. pump and coupling with motor	Unit 1 and 2	✓	
	– Trial run and recommissioning of L.O. system	Unit 1 and 2	✓	
	– Trial run of fan and dynamic balancing	Unit 1 and 2	✓	
ID fans	– Cleaning and inspection of impeller. Checking of weld joints by DPT	Unit 1 and 2	✓	
	– Cleaning and inspection of diffuser and cone	Unit 1 and 2	✓	
	– Checking of shaft protection tube	Unit 1 and 2	✓	
	– Servicing of Inlet guide vane/ actuators,	Unit 1	✓	

Component	Activity	Unit	Cat 1	Cat 2
	lubrication of IGV control mechanism for free operation	and 2		
	– Servicing of Outlet guide vanes and repair as required	Unit 1 and 2	✓	
	– Check shaft condition and run out	Unit 1 and 2	✓	
	– Checking/repair of suction/duct	Unit 1 and 2	✓	
	– Assembly of fan with specified clearances as per maintenance Q.A. sheets.	Unit 1 and 2	✓	
	– Alignment of fan and coupling with motor	Unit 1 and 2	✓	
	– Servicing of lube oil pump	Unit 1 and 2	✓	
	– Cleaning of L.O. tank/filters/piping valves etc.	Unit 1 and 2	✓	
	– Cleaning and hydro test of L.O. Coolers	Unit 1 and 2	✓	
	– Servicing of C.W.piping/Valves	Unit 1 and 2	✓	
	– Alignment of L.O. pump and coupling with motor	Unit 1 and 2	✓	
	– Rebabbitting of journal bearing	Unit 1 and 2	✓	
	– Supply of impeller and shaft as per specifications in Annexure 2, Plan 8	Unit 1 and 2	✓	
	– Trial run and recommissioning of L.O. system	Unit 1 and 2	✓	
	– Trial run of I.D. fan and dynamic balancing	Unit 1 and 2	✓	
Ash cooler fans	– Supply of impeller and shaft as per specification in Annexure 2, Plan 8	Unit 2	✓	
Insulation	– Supply and install insulation material as per specifications in Annexure 2, Plan 8	Unit 1 and 2	✓	
Coils	– Supply and install Aluminium coil for cladding as per specifications detailed in Annexure 2, Plan 8	Unit 1 and 2	✓	

Plan 9: Hangers and supports

The key activities to be executed by your entity for repair / overhaul of the hangers and supports shall include, but not be limited to, the following. The indicative list of spares to be procured for the hangers and supports have been detailed in Annexure 2, Plan 9.

Component	Activity	Unit	Cat 1	Cat 2
Internal pipe supports	– Inspect and repair / replace internal pipe supports, as detailed in Annexure 3, including remedial actions as per observations from the RLA	Unit 1 and 2	✓	
External pipe supports	– Inspect and repair / replace external pipe supports, as detailed in Annexure 3, including remedial actions as per observations from the RLA	Unit 1 and 2	✓	
Soot blower, reheater, economizer drains	– Inspect and repair / replace hangers/supports for soot blower, reheater, economizer drains as detailed in Annexure 3, including remedial actions as per observations from the RLA	Unit 1 and 2	✓	
Air and flue gas ducts	– Inspect and repair / replace hangers and supports for air and flue gas ducts as detailed in Annexure 3, including remedial actions as per observations from the RLA	Unit 1 and 2	✓	
Cyclone	– Inspect and repair / replace cyclone as detailed in Annexure 3, including remedial actions as per observations from the RLA	Unit 1 and 2	✓	

Plan 10: HFO and LDO systems

The key activities to be executed by your entity for repair / overhaul of the HFO and LDO systems shall include, but not be limited to, the following. The indicative list of spares to be procured for the HFO and LDO systems have been detailed in Annexure 2, Plan 10.

Component	Activity	Unit	Cat 1	Cat 2
Fuel oil firing system	– Clean oil gun tips, inspect, and replace, as needed	Common	✓	
	– Clean oil hoses, inspect, and replace, as needed	Common	✓	
	– Service gun advance/retract mechanism	Common	✓	

Plan 11: Lignite feeding system

The key activities to be executed by your entity for repair / overhaul of the Lignite feeding system shall include, but not be limited to, the following. The indicative list of spares to be procured for the Lignite Dosing System have been detailed in Annexure 2, Plan 11.

Component	Activity	Unit	Cat 1	Cat 2
Gravimetric feeder	– Inspect and repair gravimetric feeder including feeder belts, fasteners, MSRT machine, belt side wall (rib), gearbox, head pulley, tail pulley, carrying rollers with bearings, return rollers with bearings, NDE bearing, bunker gate, pinion, output wheel, rack angle, circlip, spacer, COC link assembly (with and without flight), guide plates, sprockets, COC bearings, and MS pipes – Replace critical items post inspection, if needed	Unit 1 and 2	✓	
Lignite draglink conveyor	– Inspect and repair lignite draglink conveyor including chain link assembly, gearbox, guide plates, sprockets, drive chain, forkey sprocket, sleeves, tail pulleys, bearings, manual gates, and glands – Replace critical items post inspection, if needed	Unit 1 and 2	✓	
Lignite rotary air lock feeder	– Inspect and repair gearbox, RALF bellows, manual gates, pipe for inlet chute, bearings, timing gears, glands, etc. – Lubricate / grease critical moving components – Replace critical items post inspection, if needed	Unit 1 and 2	✓	
General activities	– Close lignite bunker gate and clean feeder	Unit 1 and 2	✓	
	– Check bunker condition from inside	Unit 1 and 2	✓	
	– Check condition of liner	Unit 1 and 2	✓	
	– Replace the defective liners	Unit 1 and 2	✓	
	– Check the conditions of links of lignite feeder check all the joints for any looseness	Unit 1 and 2	✓	
	– Check bearing clearance and check MFT gates	Unit 1 and 2	✓	

Plan 12: Lime dosing system

The key activities to be executed by your entity for repair / overhaul of the Lime dosing system shall include, but not be limited to, the following. The indicative list of spares to be procured for the Lime dosing system have been detailed in Annexure 2, Plan 12.

Component	Activity	Unit	Cat 1	Cat 2
Bag filters	– Supply and install bag filters	Unit 1 and 2	✓	
Screw pump	– Supply and install bearings	Unit 1 and 2	✓	
Compressors	– Supply and install cylinders, ovel flanges, gaskets, cover, valve, stud, nut hex, gland, v belt, oil filter, water flow indicator, and air filter	Unit 1 and 2	✓	
Compressor belts	– Supply and install belts	Unit 1 and 2	✓	
Mill ball	– Supply and install mill balls	Unit 1	✓	
L-valves	– Supply and install balls	Unit 1	✓	
Compressor NRV	– Supply and install MRV	Unit 1 and 2	✓	
Mill gearbox	– Supply and install coupling	Unit 2	✓	
Chain conveyors	– Supply and install chain link and guide plate	Unit 2	✓	
DE / NDE pumps	– Supply and install pump	Unit 2	✓	
Main gearbox pumps	– Supply and install pump	Unit 2	✓	
Dilution blower	– Supply and install belts	Unit 2	✓	
HAG burner	– Supply and install gun	Unit 2	✓	
Ball valves	– Supply and install ball	Unit 2	✓	
Bag filter compressor	– Supply and install air filter, oil filter, gear wheel and pinion, spacers, bolts, anti-vibration pads, damper, valves, display, sensor, harness, transducer, seal ring and oil separator	Unit 2	✓	
Lime compressor	– Supply and install lime conveying system compressor	Unit 2	✓	

Plan 13: Tubular air pre-heater (TAPH)

The key activities to be executed by your entity for repair / overhaul of the TAPH shall include, but not be limited to, the following. The indicative list of spares to be procured for the TAPH have been detailed in Annexure 2, Plan 13.

Component	Activity	Unit	Cat 1	Cat 2
TAPH	– Supply and install tubes – Supply and install SS plate for bellows and pipe – Supply and install insulation and aluminum coil for cladding – Hydro jetting	Unit 1 and 2	✓	
	– Inspection of cold end PA, SA in different passes	Unit 1 and 2	✓	
	– Check for any leakage	Unit 1 and 2	✓	
	– Cleaning of PA, SA tube banks from flue gas side	Unit 1 and 2	✓	
	– Check metallic expansion joints in PA and SA header	Unit 1 and 2	✓	
	– Inspect steam coil of SCAPH	Unit 1 and 2	✓	
	– Check tubes of SCAPH	Unit 1 and 2	✓	

Plan 14: Valves

The key activities to be executed by your entity for repair / overhaul of the Valves shall include, but not be limited to, the following. The indicative list of spares to be procured for the Valves have been detailed in Annexure 2, Plan 14.

Component	Activity	Unit	Cat 1	Cat 2
Economizer and ring header drain valve	– Supply and install globe valve	Unit 1 and 2	✓	
Start-up vent MOV	– Supply and install gate valve	Unit 1 and 2	✓	
Start-up vent control valve	– Inspect and repair/recondition control valve to ensure proper functioning	Unit 1 and 2	✓	
MS drain manual valve	– Inspect and repair/recondition globe valve	Unit 1 and 2	✓	
SH drain MOV	– Supply and install wedge gate valve	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
ERV	– Inspect and repair/recondition globe valve	Unit 1 and 2	✓	
SWAS	– Inspect and repair/recondition gate valve	Unit 1 and 2	✓	
Boiler fill drain line	– Inspect and repair/recondition all high energy valves including globe valves, gate valves, ring header drain valve, interconnecting valve (economizer and ring header), superheater drain valves, soot blower valve	Unit 1 and 2	✓	
Main steam safety valve (MSSV)	– Inspect and repair/recondition wedge gate valves	Unit 1 and 2	✓	
IBD Mov	– Supply and install global valve	Unit 1 and 2	✓	
L-Valve	– Inspect and repair/recondition L-valves	Unit 1 and 2	✓	
Safety valves	– Put match mark at the time of dismantling the valve	Unit 1 and 2	✓	
	– Dismantling, cleaning, and servicing of valves	Unit 1 and 2	✓	
	– Lapping of seat/disc, machining if required. Check spindle trueness	Unit 1 and 2	✓	
	– Servicing of blow down ring	Unit 1 and 2	✓	
	– Servicing of electrical assembly of electromatic valve	Unit 1 and 2	✓	
	– Assembly of the safety valve and floating as per specifications	Unit 1 and 2	✓	
General activities *(across all valves)*	– Dismantle the valve, inspection and servicing of all the parts.	Unit 1 and 2	✓	
	– Lapping of disc/seat, machining if required	Unit 1 and 2	✓	
	– Check spindle for wear/trueness. Replace if required	Unit 1 and 2	✓	
	– Change gland packing	Unit 1 and 2	✓	
	– Change body/bonnet gasket and sealing ring	Unit 1 and 2	✓	

Plan 15: Electrical

The key activities to be executed by your entity for repair / overhaul electrical parts shall include, but not be limited to, the following. The indicative list of spares to be procured for electrical parts have been detailed in Annexure 2, Plan 15

Component	Activity	Unit	Cat 1	Cat 2
Heat tracing CKT cable	– Supply and install FOPH tracing circuit	Unit 1 and 2	✓	
FA fan	– Supply and install motor for FA fan cooling fan	Unit 1 and 2	✓	
Lignite feeding System	– Supply and install lignite rotary feeder motor	Unit 1 and 2	✓	
	– Supply and install lignite bunker gate actuators	Unit 1 and 2	✓	
Soot blower	– Supply and install motors	Unit 1 and 2	✓	
Start up Inching MOV	– Supply and install MOV actuator	Unit 1	✓	
FOPH	– Supply and install axial exhaust fans as per specifications provided in Annexure 2, Plan 15	Common	✓	

Plan 16: C&I

The key activities to be executed by your entity for repair / overhaul of C&I parts shall include, but not be limited to, the following. The indicative list of spares to be procured for C&I have been detailed in Annexure 2, Plan 16

Component	Activity	Unit	Cat 1	Cat 2
Gravimetric feeder	– Supply and install load cell	Unit 2	✓	
	– Supply and install speed sensor	Unit 1 and 2	✓	
Ash cooler phe	– Supply and install PHE temp control valve positioner	Unit 1 and 2	✓	
Lignite draglink	– Supply and install lignite draglink conveyor speed sensor	Unit 1	✓	
TAPH	– Supply and install TAPH thermocouple	Unit 1	✓	
Control valve	– Supply and install reheater and superheater valve, SH and RH attemperator positioner, and gland sealing and BFP RC control valve	Unit 1 and 2	✓	
PRDS station	– Supply and install PRDS and BFP discharge pressure transmitter	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
FRS station	– Supply and install FRS DP transmitter	Unit 2	✓	
Feed water and steam flow	– Supply and install feed water and steam flow transmitter	Unit 2	✓	
IGV	– Supply and install seal kit and IGV cylinder for PA, SA, and ID fan	Unit 1 and 2	✓	
Ash Cooler valve	– Supply and install cylinder and seal kit	Unit 1 and 2	✓	
ID fan	– Supply and install ID fan scoop positioner	Unit 1 and 2	✓	
Bed Material Feeding System Valve	– Supply and install passing seal kit	Unit 1 and 2	✓	
Furnace	– Supply and install pressure transmitter	Unit 1 and 2	✓	
Drum and Main steam Pressure	– Supply and install pressure transmitter	Unit 1 and 2	✓	
Burner system	– Supply and install ignitor, ignitor tips, ignitor SOV, cylinder, and cylinder seal kit – Supply and install oil gun cylinder and oil gun cylinder seal kit – Supply and install oil gun SOV, oil valve SOV and steam valve SOV – Supply and install HFO flame scanner	Unit 1 and 2	✓	
	– Supply and install gas flame scanner	Unit 2	✓	
Damper spare	– Supply and install damper positioner for ash cooler flow control and burner flow control	Unit 1 and 2	✓	
	– Supply and install air flow control damper	Unit 2	✓	
HFO and LDO system	– Supply and install HFO and LDO tank	Common	✓	
Lime Handling System	– Supply and install switches, temperature gauges, belt sway and pull card rope, seal kit, SOV, actuator, and level transmitter as detailed in Annexure 2, Plan 16	Unit 1 and 2	✓	
	– Supply and install pressure gauge, pressure switch and pressure transmitters across various locations as	Unit 1 and 2	✓	

Component	Activity	Unit	Cat 1	Cat 2
	detailed in Annexure 2, Plan 16			
	– Supply and install temperature gauge for various locations as detailed in Annexure 2, Plan 16	Unit 1	✓	
	– Supply and install RTD for lime mill	Unit 1	✓	
	– Supply and install seal kit, SOV, actuator, level transmitter, tacho sensor assembly, electronics speed controller, load unload SOV, booster relay, flow switch, and radar type level transmitter, as detailed in Annexure 2, Plan 16	Unit 1 and 2	✓	
HAG system	– Supply and install air filter regulator	Unit 1	✓	
	– Supply and install positioner for hag jack shaft actuator, copper tube, air filter regulator, ignitor set and flame scanner as detailed in Annexure 2, Plan 16	Unit 2	✓	
Screw pump	– Supply and install speed sensor and controller	Unit 1	✓	
	– Supply and install electronic speed switch	Unit 2	✓	
Bag filter purging system	– Supply and install solenoid valve and pressure gauge	Unit 2	✓	
Chain conveyor speed	– Supply and install speed switch	Unit 2	✓	
Bag filter control damper	– Supply and install air filter regulator	Unit 2	✓	
RC fan control damper	– Supply and install I/P convertor	Unit 2	✓	
Ash Cooler	– Supply and install pressure transmitters, vibration probe and RTD	Unit 1 and 2	✓	
Fans	– Supply and install vibration probe	Unit 1 and 2	✓	
BFP pumps	– Supply and install vibration probe	Unit 1	✓	

Component	Activity	Unit	Cat 1	Cat 2
		and 2		
Hot Water pumps	– Supply and install vibration probe	Unit 1 and 2	✓	
Flue gas analyzer	– Supply and install SO2, NOX, CO analyser and panel – Supply and install Zirconia Oxygen analyzer	Common	✓	
TAPH	– Supply and install TAPH O2 outlet analyzer	Unit 1 and 2	✓	

1.1.2.4. Radiography, leak testing, and arresting

Your entity shall conduct necessary non-destructive testing (NDT, e.g., dye penetrant test) to identify potential leakages in the boiler prior to arranging for hydro testing.

Your entity shall be responsible for arresting any leaks identified in the welding joints during hydro testing of the boilers and during the NDT. Your entity shall conduct radiography.

100% radiography and rectification of the failed and / or defective joints shall be in the scope of your entity, at no additional cost. Qualified personnel with RT Level 2 certificates from IBR approved agencies shall be engaged by your entity to conduct the radiography, as per appropriate safety guidelines and regulations.

1.1.3. Upgradation activities for ESP

1.1.3.1. Upgradation Plan

The key activities to be executed by your entity for retrofitting and upgradation of the ESPs shall include the following. The list of spares to be procured for the ESP have been detailed in Annexure 3

1. **<u>Design and engineering</u>**
   - i. TR panel modified circuit drawing for EPIC-III controller
   - ii. ESP control system interface network diagram
   - iii. Cable specification for SIR / alternative high frequency rectifier (HFTR)
   - iv. SIR / alternative high frequency rectifier (HFTR) installation diagrams with bus duct modification etc.
   - v. Gas Distribution (GD) test procedure
   - vi. Commissioning protocols
   - vii. Performance Guarantee (PG) test procedure
   - viii. O&M manual for SIR / alternative high frequency rectifier (HFTR) and EPIC-III controller
2. **<u>Cleaning, painting, and protective coatings</u>**

i. Cleaning of all surfaces using wire brush
ii. Painting of all MS fabricated parts with 02 (two) coatings of rust protective Zinc Phosphate primer
    - Collecting electrodes – will be applied with rust preventive oil Bonita Chemicals
    - Emitting electrodes spiral – no painting as SS/904L
    - Bought out finished components – as per manufacturers' standard
iii. All MS fabricated parts being supplied shall be painted as specified above and exposed surface shall be finish painted as applicable
iv. All Emitting/ Collecting Rapping motor/structure with cover shall be painted as per below paint specification
v. All Existing TR sets body shall be painted as per below paint specification
vi. All Existing handrail at hopper floor and ESP top roof floor shall be painted as per below paint specification
vii. All Staircase handrail at ESP floor shall be painted as per below paint specification

The following painting shall be done at the site:

Surface cleaning	Manual means
Primer / mid coat	Two component polyamine epoxy mastic coating, Grey, 100 DFT
Finish coat	Two components chemically curing aliphatic acrylic polyurethane coating, 60 DFT

3. Electrical requirements

i. Design equipment as per ambient temperature of 50 degree C and relative humidity of 95%
ii. Ensure all equipment is designed and suitable for
    - Electric power shall be as per 415 V +/- 10% ,50 Hz +/- 5% ,AC 3 Phase,4 Wire
    - DC Supply shall be of 24 volts
    - For instrumentation power supply shall be 110 V +/- 10% AC, 50 Hz +/- 1%, AC Single Phase

4. Switched Interface Rectifier (SIR) and Control for 4 fields

i. Supply and installation of 4 nos. SIR / alternative high frequency rectifier (HFTR) for 1st and 2nd fields (existing 1 ph TR shall be retained for remaining fields
    - SIR is a High Voltage Power Supply for ESP, based on high frequency power conversion. SIR combines a transformer/high voltage rectifier (TR) and control system for energizing and controlling ESP fields in one integrated unit. SIR Controller is the advanced controller inbuilt in SIR, with an integrated rapping control & pulse optimization software. The controller optimizes the field

charging with regard to process conditions resulting in lowest possible particulate emission for ESP

ii. Modify bus duct for installing SIRs on ESP roof to the respective field connection

5. MCC and ACP

i. Repair ACP (Auxiliary Control Panel) feeders for 3 phase power supply to SIR at ESP roof top – existing feeders are 3-phase compatible with 400 Amp rating and shall be retained
ii. Install and commissioning of feeder for hot air purging system in Unit 1 – spare feeder available at the Plant and ready to be used
iii. Supply spare feeder for hot air purging system in Unit 2
iv. Provide required electrical load data - Required power of 415V, 3 ph, 50 Hz, AC at input as per load list shall be provided by the Owner

6. ESP Control System and TR Controller

i. Supply and install advanced EPIC – III controller in 3rd and 7th fields, replacing the EPIC – II controller in existing panels
ii. Establish common control network between SIR controllers and EPIC – III controllers for all fields of boiler unit ESPs over Ethernet protocol vis Ethernet switch and Ethernet Terminal Unit (ETU) which shall be installed in the Local Panel Control Room for online monitoring and control from a single point
iii. Controllers shall have inbuilt feature for rapping sequence control

7. Rapping geared motors

i. Supply spare geared motors as defined in Annexure 3
ii. Service / repair existing geared motors to ensure compliance with the following specifications
    - Motor rating – 0.37 kW
    - Enclosure – TEFC
    - Protection class – IP 55
    - Efficiency – IE2 / EFF2
    - Insulation class – F / temp rise limited to Class B

8. Hot air purging system, local heaters, shaft insulators, and hoppers

i. Supply and install hot air purging system for insulators at ESP roof with heater bank and blower for support and shaft insulators to keep the insulators clean and extend life
ii. Modify existing MCC as per requirements

9. Power and control cable

i. Supply and install the following cables for each SIR
    - 3.5Cx120 Sq. mm. Al., XLPE insulated cable from ESP control room Power feeder to ESP roof
    - 25 Sq. mm. Cu. Flat / cable for earthing (approx. 20 mts)
    - 35 Sq. mm. Cu. Flat / cable for return path (approx. 20 mts)

- 4cx1.5 sq mm Cu. Armored control cable for rapping motor interface with SIR

1.1.3.2. Commissioning activities

Your entity shall be responsible for commissioning of the Boiler and ESP across both units of the Plant and ensuring observation for 72 hours after operationalization at full load with design parameters and continuous operation of machine, with observation of performance parameters and supervisory parameters.

1.2. Scope for supply of material

Your entity shall procure all material / equipment / spares as per the quantities and specifications detailed in Annexure 2 (Boiler) and Annexure 3 (ESP) for overhauling of both units of the Plant simultaneously.

The material / equipment / spares detailed in Annexure 2 (Boiler) have been classified into two categories, as per the following definitions:

Category 1: Material / equipment / spares required across key components to be undertaken as part of the Overhaul. Any additional material (i.e., not detailed as part of the BoQ in Annexure 2) for components classified as Category A identified during inspections, shall be notified to competent authority from the PMC and the Owner, and shall go through the 'Rate Settlement Mechanism', as detailed in Section 4 of this document.

Category 2: Multiple types of tubes and refractory required across the boilers as per tentative quantities defined in Annexure 2. Additional quantities of tubes or refractory over and above the quantities defined in the BoQ in Annexure 2 shall be notified to the competent authority from the PMC and the Owner and shall go through the 'Quantity Variance Mechanism' defined in Section 3 of this document.

1.2.1. Procurement planning

1. Your entity shall create a 'Procurement Register' for the Boiler and ESP Package in collaboration with the PMC, including all the detailed item-wise Bills of Quantity (BoQs) with associated costs and technical specifications to ensure adherence to desired quality and exercise cost control within Contractual limits
2. Your entity shall prepare a 'Procurement Plan' for the Boiler and ESP Package for the purpose of monitoring all Procurement activities and ensuring timely delivery of all material across all Packages, in line with the timelines mentioned in Section "Duration of the Contract" and Section 9.2 (Payment Milestones)
3. Your entity shall coordinate with the PMC in maintaining a digital data sheet (in excel format) of the 'Procurement Plan', with the desired timelines and costs vis-à-vis the actual timelines followed and costs incurred to track compliance. Your entity and PMC shall grant all requisite access to the data sheet to the Owner, and share necessary summaries for reporting purpose, if requested

1.2.2. Physical verification

Your entity shall, in coordination with the PMC, conduct physical verification of existing inventory at the Plant to identify the equipment and associated spares and material readily available to be utilized during the Overhaul. Further, your entity shall integrate the existing inventory with the 'Procurement Register' to ensure optimal Procurement and consumption of material.

1.2.3. Material management

Your entity shall deploy sufficient manpower and appropriate material management systems (e.g., ERP solutions) or use the Owner's material management system to track movement of material and adherence to schedules and quality. The modalities for material management shall be mutually agreed between your entity and the Owner, in consultation with the PMC, prior to initiation of procurement of material. Further, your entity shall integrate the system with the digital data sheet described in Section 1.2.1 of this document.

1.2.4. Quality management

Your entity shall ensure the procurement of material is as per the technical and design specifications provided in Annexure 2 (Boiler) and Annexure 3 (ESP), and adhere to highest standard of engineering and workmanship, to ensure after completion of the Overhaul, the Plant shall be capable of performing in a safe, reliable, sustainable, and in a manner acceptable to the owner.

1.2.5. Packing and transportation

1. Your entity shall be responsible for packing and transportation of all material to be repaired / refurbished from the Plant to your entity's / supplier's facilities and back to the Plant. Your entity shall also be responsible for loading, unloading, preservation, and storage of the material during transit
2. Your entity shall arrange for appropriate transit insurance and clearances from relevant authorities for all material to be transported from the Plant to your entity's / supplier's facilities and back
3. Your entity shall be solely responsible to replace the material that may be damaged or lost in transit and shall bear the cost for all such material. Further, your entity shall provide notice in writing to the owner, copying the PMC and the Owner with the details of the issue, as needed

1.2.6. Factory (FATs) and site acceptance tests (SATs)

1. Your entity shall arrange for factory acceptance tests to be conducted for all the material / equipment at your entity's/ supplier's facilities, prior to shipping, in the presence of the owner, the PMC, and other representatives deployed by the owner, if needed
2. Your entity shall arrange for appropriate certificate through Government approved NABL labs for material of construction (MOC) used for the material/equipment procured

3. Your entity shall provide a notice of at least 3 weeks prior to arranging for factory acceptance tests at your entity's/ supplier's facilities and provide the procedure for conducting the test for the owner's approval
4. The factory acceptance tests shall include, but shall not be limited to, the following key activities:
    i. Visual inspection: Inspection of the material / equipment for any physical defects, damage, or other issues
    ii. Functional testing: Testing the material / equipment to ensure that it performs the intended functions and meets the specified performance criteria, as applicable
    iii. Safety testing: Testing the safety features of the material / equipment to ensure that they function as intended and meet any applicable safety standards or regulations, as applicable
    iv. Documentation review: Reviewing the documentation related to the material / equipment, such as user manuals, technical specifications, and test reports
5. Your entity shall ship the material / equipment to the Plant only upon successful completion of the factory acceptance tests and sign-off by the owner and owner's representatives
6. Upon delivery and installation of material / equipment at the Plant, your entity shall arrange for a site acceptance test in the presence of the owner, the PMC, and other representatives deployed by the owner, if needed, to ensure safe delivery of all material / equipment at the Plant
7. Your entity shall provide a notice of at least 3 weeks prior to arranging for site acceptance tests at the Plant and provide the procedure for conducting the test for the owner's approval
8. The site acceptance tests shall include, but shall not be limited to, the following key activities, as may be applicable:
    i. Verification of installation: Verifying that the equipment or system has been installed correctly, according to the manufacturer's instructions and any applicable standards or regulations
    ii. Functional testing: Testing the material / equipment to ensure that it performs the intended functions and meets the specified performance criteria
    iii. Integration testing: Testing the integration of the material / equipment with other systems or components that it will be working with, prior to commissioning
    iv. Operational testing: Testing the material / equipment under various operating conditions to ensure that it can perform reliably and consistently
    v. Documentation review: Reviewing the documentation related to the material / equipment, such as user manuals, technical specifications, and test reports

1.2.7. Storage of material in Plant

Your entity shall be responsible for storage of all procured material / equipment at the Plant within your entity's shed. Your entity shall be solely responsible for security of the material /

equipment at the Plant. In case of theft / burglary / loss of material, your entity shall bear the cost of replenishing the material and ensure timely delivery to minimize impact on the execution of the Overhaul.

1.3. Standards for performance of obligations

Your entity represents and warrants that it has the requisite skills, experience, expertise, and capacity to fulfill its obligations and responsibilities under the Contract. Your entity shall perform all of its services hereunder in accordance and compliance with:

1. Accepted prudent industry practices
2. Incident reporting with corrective and preventive measures
3. Implementation of lessons learnt from incidents on similar facilities
4. All Applicable Laws
5. All applicable clearances to be obtained and maintained including but not limited to all relevant health and safety legislations, environment permits and licenses

Your entity shall have round-the-clock qualified, trained, and experienced, with valid necessary certifications, crew of adequate strength who are alert and vigilant for carrying out all the normal and emergency operations, start-up, and shutdown of Boilers and the ESPs across both units. Startup and shutdown of the plant will be done by ATPS engineers under supervision of your entity.

1.4. Standards for Sub-contracting

For the purpose of performing its obligations under the Contract, your entity may appoint Sub-Contractors with prior written intimation to the Owner as deemed fit. Appointment of such Sub-Contractors by your entity shall at no time mean that your entity is relieved of its primary duty and liability to perform its obligations as set out in the Contract. The Contractor shall be responsible for:

1. Obtaining any and all necessary authorizations required for use of all Plant infrastructure / facilities in connection with the performance of its obligations hereunder
2. Ensuring adherence to standard operating procedures and safety standards by the Sub-Contractor and be liable in the event of any issue affecting the performance of the asset

2. Responsibilities and rights of the Owner

2.1. Responsibilities of the Owner

The Owner shall be responsible for the following key activities pertaining to the execution of the Overhaul of the Plant

2.1.1. Access to Plant infrastructure

The Owner will arrange for your entity's accommodation and food and beverage requirements at the Plant for the key Personnel deployed on ground to oversee the execution of the Overhaul, on chargeable basis and on the basis of availability of accommodation. In case infrastructure is not available, your entity shall be responsible for arranging the same. Your entity shall ensure that the Personnel are available at the Plant for the entire course of Overhaul and shall take requite

consent from the Owner with prior intimation through a Written Notice in case of any changes in availability of Personnel.

2.1.2. Access to documents and data

The Owner shall provide your entity with access to available drawings, documents, design manuals, and operational information required for the successful execution of the Overhaul. In case any technical drawing, document is unavailable with the owner, then the same shall be developed by your entity at its own cost.

2.1.3. Shutdown and startup activities

The shutdown (prior to commencement of the Overhaul), and startup of the plant (post successful completion of the performance guarantee tests) shall be done by the Owner, in the presence and supervision of your entity.

2.2. Rights of the Owner

The Owner, throughout the tenure of the Contract, reserves the following rights relating to preparation and execution of the Overhaul of the Plant, not specifically granted to your entity.

2.2.1. General policies and procedures

The Owner reserves the rights for review and determination of general policies and procedures not previously delegated to your entity as part of the scope of work.

2.2.2. Audits

The Owner may, from time to time, designate any responsible person on its behalf to conduct audits, pertaining to the Owner's capacity defined in the Contract, of financial (billing and invoicing), technical, safety, and to visit and inspect the Plant to discuss such affairs, which relate to the services provided by your entity, with its authorized representatives.

2.2.3. Access to data

The Owner reserves the rights to access all records, documents, and data relating to the services provided by your entity during the preparation and the execution of the Overhaul, including for making copies thereof or extracts.

The Owner shall have the right, at all times, on reasonable notice and at the premises of your entity to examine drawings / design documents which have been prepared by your entity

3. Quantity Variance Mechanism

3.1. For supply of material

1. The quoted rates for all material / equipment / spares detailed in the BoQ in Annexure 2 shall remain the same irrespective of any variation in individual quantities
2. The quantities given in the BoQ in Annexure 2 for Category 1 shall remain fixed and will not be subjected to quantity variance

3. The quantities given in the BoQ in Annexure 2 for Category 2 are tentative and may change to any extent (both on plus and minus side)
4. Quantity variance shall be applicable on Category 2 items up to a limit of 15% (fifteen percent) of the lumpsum price for supply of material and lumpsum price of execution of Overhaul for Category B items / activities (both on plus and minus side)

3.2. For services

1. The lumpsum price for execution of Overhaul for Category 2 activities as per Section 1.1.2 this document shall vary proportionately with any change in quantity for Category 2 items (both on plus and minus side)
2. Quantity variance shall be applicable on Category 2 items up to a limit of 15% (fifteen percent) of the lumpsum price for supply of material and lumpsum price of execution of Overhaul for Category 2 items / activities (both on plus and minus side)

4. Rate Settlement Mechanism

During the execution of the Overhaul, if your entity identifies additional items to be procured and associated services to be performed, over and above the Category 1 items given in the BoQ in Annexure 2 (for Boiler), to restore the health of the equipment and ensure performance, such items and services shall be notified to the competent authorities of the PMC and the Owner prior to initiation of procurement or execution of the services.

A 'Rate Settlement Committee' shall be established with competent authorities from the PMC and the Owner. The Boiler Package Leader shall present the need for the additional items and / or services to the 'Rate Settlement Committee', with a rationale for the quantities of items to be procured and rates for the items and / or services discovered in the market. The committee shall reserve the right to negotiate the rates and authorize your entity to initiate procurement of the identified items and / or execution of the services.

5. Performance Guarantee Testing (PGT) and acceptance procedures

5.1. Performance Guarantee Testing (PGT)

1. Your entity shall submit for PMC and Owner's approval, the detailed Performance Test procedure containing the following:
    i. Object of the test
    ii. Various guaranteed parameters and tests as per contract
    iii. Method of conductance of test and test code
    iv. Duration of test, frequency of readings and number of test runs
    v. Method of calculation
    vi. Correction curves
    vii. Instrument list consisting of range, accuracy, least count, and location of instruments
    viii. Scheme showing measurement points
    ix. Sample calculation
    x. Acceptance criteria

xi. Any other information required for conducting the test

2. The Performance /Acceptance tests shall be carried out by your entity as per the procedures approved by competent authority of the PMC and the Owner in accordance with the procedures as per the ASME PTC 4.1 (for Boiler) and as per IS-11255, Part 1 and 3, 1985, reaffirmed 2003/2008 (for ESP)
3. Your entity shall make the equipment ready for carrying out the performance guarantee tests post completion of the Overhaul
4. The tests shall be binding on your entity to determine compliance of the equipment with the desired outcomes. No separate performance tests need be done on equipment which is already tested at shop
5. All instruments required for performance testing shall be of the type and accuracy required by the code and prior to the test, your entity shall get these instruments calibrated in an independent test institute. All test instrumentation required for performance tests shall be supplied by your entity and shall be retained by him upon satisfactory completion of all such tests at site. All costs associated with the supply, calibration, installation, and removal of the test instrumentation shall be borne by your entity. All calibration procedures and standards shall be subjected to the approval of the owner. The protecting tubes, pressure connections and other test connections required for conducting guarantee test shall conform to the relevant codes
6. Tools and tackles, thermo wells (both screwed and welded) instruments/ devices including flow devices, matching flanges, impulse piping, and valves etc., and any special equipment, required for the successful completion of the tests, shall be provided by your entity.
7. After the conductance of Performance test, your entity shall submit the test evaluation report of Performance test results to owner promptly but not later than two weeks from the date of conductance of Performance test. However, preliminary test reports shall be submitted to the owner after completing each test run

5.2. Desired outcome parameters

Your entity shall adhere to the desired outcome parameters defined below in order to ensure successful completion of the Overhaul and obtain an 'Operation Acceptance Certificate' by the PMC.

S. No	Parameter	Desired outcome (for each Unit)	Tolerance
Boiler			
1	Boiler Efficiency *(Estimated as per ASME PTC 4.1 method)*	83.0%	–
2	SH steam flow at the outlet	405 TPH at 100% BMCR	+-5 TPH
3	Main steam flow at HP turbine inlet	367.18 t/h at 100% load	
4	SH steam temperature at the outlet	538 °C at 100% BMCR	+- 5 °C

S. No	Parameter	Desired outcome (for each Unit)	Tolerance
5	RH steam temperature at outlet	537 °C at 100% BMCR	+- 5 °C
6	RH spray flow	0.5% at 100% TMCR	+- 0.2%
7	Hot Reheat Steam Flow at IP turbine inlet	340.45 t/h at 100% load	+-3 TPH
8	Pressure drop from Eco inlet to SH outlet	14.5 bar at 100% BMCR	+- 2 bar
9	Pressure drop from RH inlet to RH outlet	1.90 bar at 100% BMCR	+- 0.1 bar
10	Flue gas temperature leaving TAPH	135° C at 100% TMCR	+- 5 °C
11	Flue gas pressure loss between cyclone outlet and TAPH outlet	18 mbar at 100% BMCR	+- 5 bar
12	Limestone consumption	< 55 t/h	–
13	Minimum load without oil firing	50% BMCR	–
ESP			
1	Particulate matter (with limestone feeding in operation)	30 mg/Nm3	
2	SO_2 (with limestone feeding in operation, as per lignite and lime characteristics defined below)	600 mg/Nm3	
3	NO_x (with limestone feeding in operation, as per lignite and lime characteristics defined below)	300 mg/Nm3	
4	Mercury (with limestone feeding in operation, as per lignite and lime characteristics defined below)	0.03 mg/Nm3	
5	ESP efficiency *(At design inlet dust load of 205 gm/Nm3 and emission of 30 mg/Nm3, (wet basis, actual O2%))*	99.985%	- 0.01%
6	Auxiliary Power Consumption *(Including SIR and TR corona power, hopper heater power, rapping motor power, insulator purge system power)*	525 KW	+ 2%
7	Pressure drop across ESP	20 mmWC	+ 2%
8	Air leakage across ESP	2.6 m3/sec	+ 5%

S. No	Parameter	Desired outcome (for each Unit)	Tolerance
		(1% of design inlet gas flow)	

Lignite Characteristics

Your entity shall conduct proximate analysis, ultimate analysis, and particle size distribution tests for the lignite fired during the Performance Guarantee Test and submit the reports to the competent authority from the PMC and the Owner as part of the test.

The lignite characteristics used for estimation of the guaranteed values have been specified below:

Proximate Analysis

Parameter	Unit	Value	Range for Performance Testing
Moisture	%	35	30 – 35
Ash	%	21	18 – 35
Volatile	%	26	20 – 30
Fixed C	%	18	12 – 20
Sulphur	%	3.87	2 – 4.55
HHV	Kcal/kg	3,205	2000 – 3205

Ultimate Analysis

Parameter	Unit	Value
Carbon	%	30.52
Hydrogen	%	2.16
Nitrogen	%	0.51
Oxygen	%	6.94
Moisture	%	35.0
Ash	%	21.0

Particle Size Distribution of Lignite

Parameter	Value
> 6mm (max. 10 mm)	1%
0 – 6 mm	99% (min)
0 – 3.5 mm	85 – 90%
0 – 2 mm	50 – 60%
0 – 1 mm	20 – 30%

Parameter	Value
0 – 0.5 mm	10 – 20%

Limestone Characteristics

Your entity shall conduct analysis of the limestone consumed during the Performance Guarantee Test and submit the reports to the competent authority from the PMC and the Owner as part of the test.

The limestone characteristics used for estimation of the guaranteed values have been specified below:

Parameter	Unit	Value
CaO	%	45.12
Fe2O3	%	5.03
Al2O3	%	2.78
P2O5	%	0.03
MnO	%	0.54
MgO	%	1.44
CaCO3	%	80.60
MgCO3	%	3.00
Moisture	%	2 – 3

Particle Size Distribution of Lignite

Parameter	Value
> 0.6 mm	5% (max)
0 – 0.4 mm	95% (min.)
0 – 0.315 mm	70 – 80%
0 – 0.2 mm	55 – 65%
< 0.090 mm	40 – 50%

Design parameters for upgraded ESP

The parameters for upgraded ESP used for estimation of the guaranteed values have been specified below:

S. No	Parameter	Unit	Value for each 125 MW boiler ESP	Acceptable limits
1	Gas volume [total for two ESPs in one boiler unit]	m3/s, wet, actual O2	260	+-10 m3/s
2	Flue Gas temperature at inlet	Deg C	136	+- 2 deg C

S. No	Parameter	Unit	Value for each 125 MW boiler ESP	Acceptable limits
3	Moisture content in flue gas	% by volume	10	+- 2%
4	Static pressure at ESP inlet	mmWC	- 265	+- 5 mmWC
5	Inlet dust load (with Lime Feeding)	gm/Nm3, wet, actual O2	205	+ 5 gm/Nm3
6	Outlet Emission after the proposed upgrade	mg/Nm3, wet, actual O2	<=30	

5.3. Notice of tests

Your entity shall issue 21 (twenty-one) days' notice to the Owner of the date after which he will be ready to commence the tests and your entity shall commence the tests promptly thereafter.

5.4. Retesting

If the unit fails to pass the test (which in the case of performance tests means not achieving the acceptable limits), the Owner reserves the right to ask your entity to repeat such tests on the same terms and conditions. The retest shall be conducted by your entity within 14 (fourteen) days of notification from the Owner.

5.5. Delayed tests

If the tests could be carried out but are being unduly delayed by your entity, the Owner may by notice inform your entity to conduct the tests within 14 (fourteen) days after the receipt of such notice. Your entity shall conduct the tests on such days within that period as your entity may fix and of which he shall issue notice to the Owner.

If your entity fails to conduct the tests within such notice the Owner may himself proceed with the tests. All tests so conducted by the Owner shall be at the risk and cost of your entity and the cost thereof shall be deducted from the contract price or charged to your entity. The tests shall then be deemed to have been conducted by your entity and the test results shall be binding on your entity.

5.6. Independent inspector

The Owner reserves his right to appoint an independent inspector, at its own cost, as its representative to discuss the test program, to approve the instrumentation, to witness the tests and to analyze the test results.

It is your entity's responsibility to co-ordinate for suitably carrying out the performance tests. The duration of the test shall be in accordance with the agreed test codes at the loads after necessary stabilizing period to obtain steady state conditions. All other tests to prove the guarantees as indicated in your entity's offer shall also be conducted.

The equipment parameters during the performance test shall be adjusted as far as practicable to the guaranteed performance test conditions. The tests shall be conducted to prove guaranteed parameters as defined in the contract.

The performance test results shall be reported as computed from the performance test observations with corrections for site conditions, variations in load, etc., and test conditions. Such correction curves shall be submitted along with the bid. No additional allowances for errors in measurement are permissible. The measurement uncertainty on the performance test guarantee values, as reported on the basis of above tests shall not exceed the uncertainty limits specified.

5.7. Reporting of test results

Immediately after the conclusion of the performance test, Your entity shall submit a test report (Six copies of each test) to the Owner stating whether the unit has passed or failed such test, accompanied by sufficient test data and calculations to demonstrate the level of performance attained with respect to each of the tested parameters.

The report(s) shall include as a minimum, the following:

i. Description of the test procedures
ii. Standards that were used
iii. Instrumentation details and calibration
iv. Full schematic diagrams with indication of instrument test location and identification tag of same
v. Test logs and summary of test readings used for efficiency calculations
vi. Full set of correction curves, if applicable
vii. Computation of test results
viii. Computations to prove measurement uncertainty is within acceptable limits
ix. Boiler Efficiency
x. Plant performance parameters
xi. Templates for calculations (validated by the PMC)
xii. Data reduction
xiii. Chronology of events
xiv. List of exceptions to procedure
xv. Operator log sheets
xvi. Detailed calculations at guaranteed loads
xvii. Conclusions of performance tests: test passed or not

5.8. Acceptance of test report

Within 14 (fourteen) days of receipt such test report(s), the Owner shall submit a notice to your entity stating either:

i. That Owner concurs with the information provided in your entity's test report(s), or
ii. That Owner disputes some or all of the information provided in your entity's test report(s), the areas being disputed, and the levels of performance being disputed.

If Owner concurs with the information in your entity's test report(s), the Owner shall, within 14 (fourteen) days of receipt of the test report, provide a written notice to your entity accepting the results of the tests.

If Owner disputes any or all of the results contained in your entity's test report(s), representatives of your entity, Owner and the Engineer shall meet within 14 (fourteen) days of the receipt of the Owner notice at a mutually acceptable location to review and discuss the dispute.

5.9. Disagreements as a result of tests

If the Owner and your entity disagree on the interpretation of the test results, each shall give a statement of his views to other within reasonable time after such disagreement arises. The statement shall be accompanied by all relevant evidence. The Owner and your entity shall mutually discuss and agree regarding the results of the test.

6. Reporting requirements and deliverables

Your entity shall prepare and submit a comprehensive 'Overhaul Completion Report' incorporating the key activities undertaken, results of the Performance Guarantee Test, and list of material supplied to the Owner as part of the Overhaul, within 2 weeks of completion of the Overhaul, to mark the completion of the Overhaul.

Further, your entity shall prepare and submit fortnightly progress reports with the PMC, and the Owner. Each progress report shall include:

1. Photographs and detailed descriptions of progress including each stage of design, procurement, manufacture, delivery at Site, construction, erection, testing and commissioning
2. A detailed description of the milestones achieved, and the Work/ Services performed prior to the date of the fortnightly progress report and the extent to which payments therefore have been received against the milestones
3. A description of the current status (the name of manufacturer, manufacture location, percentage progress, and the actual or expected dates of commencement of manufacture, your entity's inspections, tests, and delivery) of supplies and Equipment and of your entity's and all Major Sub-Contractors activities and engineering, manufacturing and construction progress as compared with the Project Schedule.
4. Copies of quality assurance reports including test results (i) from the manufacturing and fabrication facilities of all Sub-Contractors and (ii) with respect to all construction activity at the Facility Site
5. Safety statistics required under Applicable Laws, including details of any hazardous incidents and activities relating to environmental aspects and public relations.
6. Comparisons of actual and planned progress, with details of any aspects which may jeopardize the completion in accordance with the Contract, including Overhaul Execution Plan and the mitigation measures / action plan being (or to be) adopted to overcome such aspects. It shall include a clear identification and evaluation of problems and deficiencies in the Services (including but not limited to an evaluation of any factors which are anticipated to have a material effect on the Project Schedule).

Any other information as considered necessary by Owner / Owner's Representative

7. Contract Performance Measurement

7.1. Key Performance Indicators (KPIs)

Your entity shall adhere to the following KPIs and targets during the Overhaul. In case of shortfall, liquidated damages shall be applicable and in case of superior performance, incentives shall be applicable as per the following sections:

7.1.1. Time-based KPIs

Phase	KPI	Liquidated damages	Incentive
Execution of Overhaul	Schedule compliance with 'Overhaul Execution Plan' for Boiler and ESP package prepared by your entity as per Section 1.1.1.1 of this document	0.5% of lumpsum price for Overhaul execution for every week of delay in completion of 'Overhaul Execution Plan'	0.5% of lumpsum price for supply of material and lumpsum price for Overhaul execution for every week of delivering ahead of schedule in completion of 'Overhaul Execution Plan'

7.1.2. Performance-based KPIs

KPI	Threshold (for each Unit)	Liquidated damages
Boiler		
Limestone consumption rate	55 TPH	INR 18 Lakhs per 1 TPH increase in limestone consumption
ESP		
ESP efficiency *(At design inlet dust load of 205 gm/Nm3 and emission of 30 mg/Nm3, (wet basis, actual O2%))*	99.985%	INR 30 Lakhs for 0.01% shortfall in ESP efficiency
Auxiliary Power Consumption *(Including SIR and TR corona power, hopper heater power, rapping motor power, insulator purge system power)*	525 KW	INR 1.85 Lakhs per KW increase in APC of ESP
Pressure drop across ESP	20 mmWC	INR 6 Lakhs per mmWC

KPI	Threshold (for each Unit)	Liquidated damages
		increase in pressure drop
Air leakage across ESP	2.6 m3/sec (1% of design inlet gas flow)	INR 5.5 Lakhs per m3/sec increase in air in leakage

7.2. Overall ceiling on Liquidated Damages and incentives

7.2.1. All liabilities due from your entity arising out of the shortfall of performance levels mentioned under Section 7.1, as per the liquidated damages defined in Section 7.1, during the course of the Overhaul, shall be restricted to a maximum of 10% of the lump sum price for supply of material and Overhaul execution defined in Section 9.1 of this document

7.2.2. All incentives due to your entity arising out of the enhanced performance levels mentioned under Section 7.1, as per the incentives defined in Section 7.1, during the course of the Overhaul, shall be restricted to a maximum of 5% of the lump sum price for supply of material and Overhaul execution defined in Section 9.1 of this document

8. Defect liability

8.1 Your entity warrants that the Boiler and ESP or any part thereof shall be free from defects in the design, engineering, materials, and workmanship of the equipment supplied and of the work executed

8.2 The Defect Liability Period shall be 18 (eighteen) months from the date of Completion of the Overhaul (or any part thereof) or 12 (twelve) months from the date of Operational Acceptance of the equipment (or any part thereof), whichever first occurs, as certified by the PMC/owner /any agency on behalf of owner

8.3 If during the Defect Liability Period any defect should be found in the design, engineering, materials, and workmanship of the equipment supplied or of the work executed by your entity, your entity shall promptly, in consultation and agreement with the Owner regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good (as your entity shall, at its discretion, determine) such defect as well as any damage to the equipment caused by such defect

8.4 The Owner shall give your entity a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Owner shall afford all reasonable opportunity for your entity to inspect any such defect.

8.5 The Owner shall afford your entity all necessary access to the Plant to enable your entity to perform its obligations under this clause

8.6 Your entity may, with the consent of the Owner, remove from the Plant, any equipment or any part of the equipment that are defective if the nature of the defect, and/or any damage to the Plant caused by the defect, is such that repairs cannot be expeditiously carried out at the Plant

8.7 If the repair, replacement or making good is of such a character that it may affect the efficiency of the equipment or any part thereof, the Owner may give to your entity a notice requiring that tests of the defective part of the equipment shall be made by your entity immediately upon completion of such remedial work, whereupon your entity shall carry out such tests.

8.8 If such part fails the tests, your entity shall carry out further repair, replacement or making good (as the case may be) until that part of the equipment passes such tests. The tests in character shall in any case be not less than what has already been agreed by the Owner and your entity for the equipment

8.9 If your entity fails to commence the work necessary to remedy such defect or any damage to the equipment caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Owner may, following written notice to your entity, proceed to do such work, and the reasonable costs incurred by the Owner in connection therewith shall be deducted by the Owner from any payment due to your entity or claimed under the Performance Security

8.10 If the equipment or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period shall be extended by a period equal to the period during which the equipment or such part cannot be used by the Owner because of any of the aforesaid reasons. Upon correction of the defects in the equipment or any part thereof by repair/ replacement, such repair/ replacement shall have the Defect Liability Period extended by a period of twelve (12) month from the time such replacement/repair of the equipment or any part thereof

8.11 If a defect in equipment or any part thereof supplied by your entity occurs a total of once during the original Defect Liability Period, the extension of the original Defect Liability Period for the repaired or replaced part(s) or equipment shall not extend beyond a total of twenty-four (24) months from the beginning of the original Defect Liability Period

8.12 However, if there are recurring (more than once) failures in an equipment or any part thereof supplied by your entity within twenty-four (24) months from the beginning of the original Defect Liability Period, the warranty shall be limited to a period of five (5) years from the end of the Defect Liability Period

8.13 At the end of the Defect Liability Period, your entity liability ceases except for latent defects. Your entity's liability for latent defects warranty shall be limited to a period of five (5) years from the end of Defect Liability Period. For the purpose of this clause, the latent defects shall be the defects inherently lying within the material or arising out of design deficiency which do not manifest themselves during the Defect Liability Period

8.14 In case, there is any dispute between Owner and your entity regarding latent defects, a third party as mutually agreed upon by the Owner and your entity shall be engaged by the Owner for settling the dispute

8.15 The third party, so engaged by the Owner, shall be paid fee plus reasonable expenditures incurred in the execution of its duties as mentioned above. These costs shall be recoverable from your entity and your entity shall bear and / or reimburse such costs to the Owner if the latent defect has been proved. If the dispute regarding latent defects cannot be settled as above, then the dispute shall be settled as per Section 14.6 (Arbitration) of the RfP as deemed fit

9. Payment terms

9.1. Lumpsum Charges for Boiler ESP Package

Your entity shall quote the lumpsum charge for supply of material and lumpsum charge for Overhaul execution (services) for the duration of the execution of the Overhaul.

9.1.1. Lumpsum charges for supply of material

Your entity shall quote the unit rate for all items detailed in the BoQ given in Annexure 2 and Annexure 3. The lumpsum charges for supply of material shall be calculated as the sum of the unit rates times the quantities detailed in the BoQ for all items.

9.1.2. Lumpsum charges for Overhaul execution

Your entity shall quote the service charges for Category 1 and Category 2 activities separately as per the indicative format in Annexure 14. The lumpsum charges for execution of Overhaul shall be estimated as the sum of the charges quoted for Category 1 and Category 2.

9.2. Payment milestones

The Owner hereby covenants to pay your entity for performance of the Contractual terms as payment terms specified hereunder –

T – date of acceptance of LOA

Category	Activity	% of total contract value	Timelines
Supply of material	Advance payment for procurement of spares, after submission of Performance Security and submission of item-wise price list	10%	T + 2 weeks
	Placement of POs for procurement of spares	25% (pro-rated[1])	T + 10 weeks
	Delivery of material on site with physical verification, certification, and sign-off by the PMC	40% (pro-rated[1])	T + 24 weeks
	Completion of SATs for equipment across both units and issue of certificate by PMC	5%	T + 28 weeks
	Completion of Guarantee Tests for both units and issue of Operation Acceptance Certificate by the PMC	5%	T + 45 weeks
	Submission of final 'Overhaul Completion Report' approved by Authority	10%	T + 48 weeks
	Completion of defect liability (warranty period)	5%	18 (eighteen) months from the date of Completion of the

[1] Bidders to provide detailed item wise price for the required spares detailed in Annexure 2 (Boiler) and Annexure 3 (ESP) of this document within 14 days from date of acceptance of LoA. The payment on delivery of material on site shall be prorated as per the items delivered against the required spares, upon certification by the PMC.

Category	Activity	% of total contract value	Timelines
			Overhaul or 12 (twelve) months from the date of Operational Acceptance of the equipment, whichever first occurs
Overhaul execution	Mobilization fee	5%	T + 2 weeks
	Completion of overhaul and guarantee of auxiliary boiler (including hydro test and light up) and issue of completion certificate by PMC	10%	T + 10 weeks
	Monthly payments against progressive installation of equipment on site	15% (per month)	Monthly payments in equal installments for 3 months during Overhaul execution
	Completion of the Overhaul activities for auxiliary boiler, main boilers, and ESP for both units and issue of Completion Certificate by the PMC	10%	T + 42 weeks
	Completion of Guarantee Tests for both units and issue of Operation Acceptance Certificate by the PMC	15%	T + 45 weeks
	Submission of final 'Overhaul Completion Report' approved by Authority	10%	T + 48 weeks
	Completion of defect liability (warranty period)	5%	18 (eighteen) months from the date of Completion of the Overhaul or 12 (twelve) months from the date of Operational Acceptance of the equipment, whichever first occurs

1. Your entity shall submit invoices upon achieving milestones stated in sub clause hereinabove. Authority shall make payment within 30 days of submission of invoices upon verifying the milestone for which invoice is submitted subject to deduction of any damages pursuant to Contract conditions
2. Applicable GST, over and above approved Lumpsum Charges for Boiler and ESP Package, at the time of invoicing shall be reimbursed by the Owner upon submission of proof thereof. The risk of applicability of any taxes, duties, and levies except GST, shall rest with your entity
3. The Owner shall be entitled to deduct tax at source as may be applicable. The TDS certificate(s) shall be submitted as per the due date specified in the Income Tax Act

10. Insurance

10.1. Insurance of Equipment

Your entity shall, at their sole cost, in the joint names of Owner, your entity, and the Sub-Contractors, take insurance cover for full replacement value for the following:

1. "Material Damage Insurance" (Storage-cum-Erection Insurance) on an “All Risk" basis (including terrorists act, SRCC) of loss or of damage arising during period of Insurance coverage to any part of the Contract works, material and supplies by your entity including any transit and off-site storage, and anywhere in India for ex-works Indian factory and foreign supplies, materials, etc.
2. Such insurance shall be administered and managed by your entity and shall be affected from the Commencement date of Contract and thereafter shall operate from the time the relevant property leaves the premises of the manufacturers in the country of origin, and shall continue during the ordinary course of transit and during storage on or off the Plant site, if any, and during erection and commissioning until the date on which Owner takes over the care, custody, and control of the Plant/Equipment, to the exclusion of your entity

10.2. Rented Equipment

1. All construction equipment shall be brought to and kept at the Site at the sole cost, risk and expense of your entity. Owner shall not be liable for any loss or damage thereto. Your entity, at his sole discretion, may maintain adequate, appropriate and prudent insurance with respect to such construction equipment. Your entity shall obtain adequate insurance to cover all construction equipment rented or leased from third parties and also for the construction equipment of Sub-Contractor.
2. Any insurance policy carried by your entity, any Sub-Contractor or any third party on or in respect of any construction equipment shall provide for waiver of the underwriter’s right to subrogation against Owner, their assignees, subsidiaries, parent companies, affiliates, employees, insurers, and underwriters.

10.3. Statutory Insurance Benefits

Your entity shall maintain with respect to the Work to be done under the Contract, in each applicable jurisdiction, all statutory benefits and other insurance required by law including without limitation unemployment insurance.

10.4. Third Party Insurance

1. Your entity shall, in the joint names of Owner, your entity and the Sub-Contractor’s prior to the commencement of any work in the Plant pursuant to this Agreement, insure in an amount not being less than project cost thereof against any liability for damage or death or personal injury occurring in the Plant, obstruction, loss of amenity, trespass, nuisance or advertising liability pursuant to the Contract. Such insurance shall be endorsed or amended as to be considered primary, and any other insurance maintained by Owner shall be in addition and not contributory to this insurance.

2. Indemnity amount indicated above shall be the minimum coverage that your entity takes under the policy. Notwithstanding the above coverage, your entity at their discretion will take policy for an appropriate coverage not less than the indemnification amount prescribed as above, so as to meet all the liabilities that may arise on account of third-party risks from the commencement of contract till the Owner takes over the care, custody, and control of the Plant, to the exclusion of your entity.

10.5. Insurance against Accident, etc. to Workmen; Other Insurance

Your entity shall, at its sole expense, insure and shall maintain insurance as required by Indian and all other applicable laws for all actions, suits, claims, demands, costs, charges, and expenses arising in connection with the death of or injury to any person employed by your entity or its Sub-Contractor for the purpose of the performance of the Work.

10.6. Disclosure

Each Party shall, upon request, promptly furnish the other Party any information which is reasonably available and is related to the fulfillment of the contractual obligations as is necessary to enable the other Party to comply with its disclosure obligations under the insurance which it has taken out, the terms of which have been disclosed to the other Party in writing.

At the Owner's request, your entity shall provide evidence of insurance covers, or a certificate of all insurances maintained.

10.7. Remedy on Failure to Insure

If your entity fail to effect and keep in force the insurance for which it is responsible under the Contract, Owner may effect and keep in force any such insurance, and pay such premiums as may be necessary for that purpose, and from time to time, after receipt of a reimbursement request therefore accompanied by relevant supporting documentation, deduct the amount so paid by Owner from any amounts due or which may become due to your entity under the Contract or otherwise from the Owner.

10.8. Limitation of Liability

Notwithstanding any other provisions, except in cases of criminal negligence or willful misconduct,

1. Whether expressed or implied, in no event, whether as a result of breach of contract, warranty, indemnity, tort (including negligence) strict liability or otherwise, shall either Party be liable to the other for loss of contract, loss of profit or revenue, loss of use, loss of data or information, loss of power, cost of replacement power, increased cost of operation and cost of capital or for any indirect, special, collateral, or consequential damages
2. The aggregate liability of your entity to the Owner, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Value, provided that this limitation shall not apply to any obligation of your entity to indemnify the Owner with respect to patent infringement.

10.9. Claims for losses/damages

1. Your entity/Sub-Contractor shall make all claims with the underwriter/s and undertake all formalities/step required for settlement of claims
2. Your entity/Sub-Contractor shall hold harmless the Owner for non-settlement/short settlement/part settlement or repudiation of claims by the underwriter/s
3. Your entity shall be obliged to replace / repair the Equipment/ components/parts/spares etc., without waiting for loss settlement by the underwriter/s

11. Non fulfilment of terms and conditions and Termination of Contract

11.1. If at any time during the currency of this contract, if any breach occurs due to the reasons attributed to your entity, the Owner shall be at liberty to terminate this contract without assigning any reasons, whatsoever, for such termination and any losses and/or damages occurring due to such termination shall be borne by your entity.

11.2. If your entity fails to carry out the work as per terms and conditions of the contract to the satisfaction of the Owner, the Owner shall be entitled to forfeit the Performance Security paid by your entity as per Section 7.3 of Part 3 of the RfP. This, however, shall not absolve your entity from its obligation to fulfill the contract. In such event, the Owner shall have a right to complete and / or to get the work completed at the cost & risk of your entity and your entity shall be responsible to pay such cost incurred by the Owner to complete the work and / or to get the work completed

11.3. Likewise, if your entity does not fulfill the terms and conditions of the Contract and does not carry out the work up to the entire satisfaction of the Owner, the Owner has the right to forthwith terminate the Contract at its sole discretion, without assigning any reason, Under such events, the Owner shall be entitled to forfeit the Performance Security paid by your entity as per Section 7.3 of Part 3 of the RfP, and the Owner shall have a right to complete the work and / or to get the work completed at the risk and cost of your entity

11.4. For any reasons, if it is required, the Owner reserves rights to cancel, terminate, amend and / or alter the Contract and / or bifurcate and / or increase and/or reduce the Contract work at any time without giving any notice or reason to your entity and without incurring any responsibility.

Duration of the Contract

The Contract shall be deemed to have come into force and effect 7 (seven) days from the date of acceptance of the Letter of Award (LOA) by the Owner to your entity and your entity shall execute the scope of work for provision of services and supply of material as covered in Section 1 within a period of 45 weeks from the date of acceptance of LoA. In the said duration, your entity shall complete the following key activities in the Package as per the stipulated timelines, where T shall mean the date of acceptance of the LOA:

S. No	Activity	Duration
1	Mobilization	T + 2 weeks

S. No	Activity	Duration
2	Completion of supplies for Auxiliary Boiler	T + 10 weeks
3	Overhauling and commissioning of Auxiliary Boiler	T + 16 weeks
4	Completion of supplies for both units for Boiler and ESP	T + 28 weeks
5	Completion of pre-Overhauling activities for both units	T + 28 weeks
6	Overhauling and commissioning of boilers across both units	T + 40 weeks
7	Retrofitting of ESPs across both units	T + 40 weeks
8	Completion of Performance Guarantee Testing for both units	T + 45 weeks

The Contract shall be deemed to be successfully executed post completion of the activities, as certified by competent authority from the PMC and Owner. Your entity shall strive to complete the execution within the stipulated period of 45 weeks, however, in case of a delay, your entity shall ensure completion of its contractual obligations as early as possible, while the Owner reserves the right to levy penalties/liquidated damages as described in Section 7.1 of this document

Contract Value

The total contract value, costs amounts to INR _____ (_____ only) excluding GST.

Performance Security

Your entity shall furnish a Performance Security to GMDC for securing the due and faithful performance of its obligations under the Agreement, within 7 (seven) days from the date of acceptance of LOA, in the form of Demand Draft or an unconditional and irrevocable bank guarantee (Annexure 16 of the RfP) for amount of equivalent to 10% (ten percent) of the Lumpsum Boiler ESP Charge (without GST) quoted for the Overhaul of Boiler and ESP at 2X125 MW Akrimota Thermal Power Station, i.e., _____ (Rupees _____ only), payable to GMDC by your entity (the "Performance Security") from approved bank to GMDC. Such Performance Security shall be in favor of "Gujarat Mineral Development Corporation Ltd" and admissible and payable at Ahmedabad branch from approved bank to GMDC.

You shall maintain a valid and binding Performance Security for a period of 24 months. Your entity shall ensure that the Performance Security shall subsist in full force and effect in terms hereof, throughout the tenure of the Contract and thereafter until expiry of twenty four months. In case tenure of the Contract is extended then your entity shall have to renew Performance Security for a period of extended tenure.

Signing of agreement

After acknowledgement of the LOA as aforesaid, subject to furnishing the Performance Security as per the RfP provisions, your entity execute/sign the Agreement within the 30 (thirty) days from the date of LoA.

You shall get a correct amount of Stamp Duty adjudicated (Stamp Paper of Rs. 300 denominations can be used), at Ahmedabad in accordance with Applicable Law and submit the same in two copies duly stamped and executed within 30 (thirty) days from the dispatch of Letter of Award. GMDC shall return one copy duly sealed and signed as a token of acceptance of the Contract. Stamp Duty, and any other charges as may be levied under Applicable Law, shall be paid by your entity.

You are hereby requested to return the duplicate copy of this LoA within 7 (seven) days from the date of issue of this LoA, i.e., by _____ as a token of receipt and acknowledgement of this LoA, as well as an absolute, unconditional, and unqualified acceptance and compliance of the conditions mentioned.

All other terms and conditions of RFP No: _____and associated corrigendum shall be read with this LoA and shall be considered as a part of this LoA.

Thanking you,

Yours faithfully,

For Gujarat Mineral Development Corporation Ltd.

General Manager (Power and Purchase)

Copy to:

1. PA to MD, Corporate Office, Ahmedabad
2. CGM & CFO, Corporate Office, Ahmedabad
3. Sr. GM (Tech.), Corporate Office, Ahmedabad
4. GM (Accounts), Corporate Office, Ahmedabad

Acceptance

We hereby irrevocably and unconditionally accept the above award of work as per the terms and conditions stipulated in this LoA as well as all conditions of the RfP for Boiler and ESP Package for Overhaul of GMDC's 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat and subsequent corrigendum dated _____.

Date:

Place:

Signature with stamp: