

General Manager (Power & Purchase)

**Gujarat Mineral Development Corporation Ltd.**

(A Government of Gujarat Enterprise)

Khanij Bhavan, 132 Feet Ring Road, Near University Ground, Vastrapur, Ahmedabad - 380 052.



**RFP**

# Comprehensive Operations and Maintenance Partner for GMDC's 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat



RFP No: GMDC/Power/ATPS/19/23-24





Comprehensive Operations and Maintenance  
Partner for GMDC's 250 (2x125) MW Akrimota  
Thermal Power Station (ATPS), Gujarat



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**Gujarat Mineral Development Corporation Ltd.  
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## Glossary

Abbreviation	Full form
<b>AMC</b>	Annual Maintenance Contract
<b>AoA</b>	Articles of Association
<b>APC</b>	Auxiliary Power Consumption
<b>ASME</b>	American Society for Mechanical Engineers
<b>ATPS</b>	Akrimota Thermal Power Station
<b>Bi-ARM</b>	Biannual Review Meeting
<b>BOQ</b>	Bill of Quantities
<b>BTG</b>	Boiler Turbine Generator
<b>C&amp;I</b>	Control and Instrumentation
<b>CAPA</b>	Corrective And Preventive Actions
<b>CCTV</b>	Closed Circuit Television
<b>CCW</b>	Closed Cooling Water
<b>CFBC</b>	Circulating Fluidized Bed Combustion
<b>CPP</b>	Coal Power Plant
<b>CT</b>	Constant Temperature
<b>CW</b>	Circulating Water
<b>DCS</b>	Distributed Control System
<b>DGR</b>	Daily Generation Report
<b>DM</b>	Demineralization
<b>DP</b>	Differential Pressure
<b>DPM</b>	Daily Planning Meeting
<b>EMD</b>	Earnest Money Deposit
<b>EPC</b>	Engineering Procurement Construction
<b>EPF</b>	Employee's Provident Fund
<b>ERV</b>	Electronic Relief Valve
<b>ESI</b>	Employee's State Insurance Act
<b>ESP</b>	Electrostatic Precipitator
<b>ETU</b>	Ethernet Terminal Unit
<b>FAT</b>	Factory Acceptance Test
<b>FIP</b>	Focus Improvement Plans
<b>FIS</b>	Financial Score
<b>FOPH</b>	Fuel Oil Pump House
<b>FRS</b>	Feed Regulating Station
<b>GD</b>	Gas Distribution
<b>GI</b>	Galvanized Iron
<b>GMDC</b>	Gujarat Mineral Development Cooperation

<b>GSS</b>	Grid Sub Station
<b>GST</b>	Goods and Services Tax
<b>GSTIN</b>	Goods and Services Tax Identification Number
<b>GUVNL</b>	Gujarat Urja Vikas Nigam
<b>HFO</b>	Heavy Fuel Oil
<b>HFTR</b>	High Voltage Rectifier Transformer
<b>HHV</b>	High heating value
<b>HRSB</b>	Half Retractable Soot Blower
<b>HSE</b>	Health, Safety, Environment
<b>IBD</b>	Intermittent Blow Down
<b>IBR</b>	Indian Boiler Regulations
<b>ID</b>	Induced Draught
<b>IGV</b>	Inlet Guide Vane
<b>KPI</b>	Key Performance Indicators
<b>LD</b>	Liquidated Damages
<b>LDO</b>	Light Diesel Oil
<b>LHV</b>	Lower Heating Value
<b>LOA</b>	Letter of Acceptance
<b>LPG</b>	Liquified Petroleum Gas
<b>MHP</b>	Material Handling Plant
<b>MoA</b>	Memorandum of Association
<b>MOC</b>	Material of construction
<b>MRM</b>	Monthly Review Meeting
<b>MRV</b>	Multi Role Valve
<b>MS</b>	Mild Steel
<b>MSME</b>	Micro, Small, Medium enterprises
<b>MSSV</b>	Main Steam Safety Valve
<b>NABL</b>	National Accreditation Board for Testing and Calibration Laboratories
<b>O&amp;M</b>	Operations and maintenance
<b>OEM</b>	Original Equipment manufacturer
<b>P&amp;ID</b>	Piping and Instrumentation Design
<b>PA</b>	Public Address System
<b>PAF</b>	Plant Availability Factor
<b>PF</b>	Provident Fund
<b>PG</b>	Performance Guarantee
<b>PHE</b>	Plate Heat Exchanger
<b>PLF</b>	Plant Load Factor
<b>POA</b>	Power of Attorney



<b>PPA</b>	Power Purchase Agreement
<b>PPE</b>	Personal Protective Equipment
<b>PSU</b>	Public Sector Undertaking
<b>QAP</b>	Quality assurance plan
<b>QCBS</b>	Quality Cost Based System
<b>QCP</b>	Quality control plan
<b>QIP</b>	Quality Inspection Plan
<b>RC</b>	Remote Control
<b>RCA</b>	Root Cause Analysis
<b>RFP</b>	Request for proposals
<b>RH</b>	Reheater
<b>RPAD</b>	Registered Post with Acknowledgement Due
<b>SEB</b>	State Electricity Board
<b>SFOC</b>	Secondary Fuel Oil Consumption
<b>SGA</b>	Small Group Activity
<b>SH</b>	Superheater
<b>SHR</b>	Station heat rate
<b>SLC</b>	Specific Lignite Consumption
<b>SMP</b>	Standard Maintenance Procedures
<b>SOP</b>	Standard Operating Procedures
<b>SS</b>	Stain Steel
<b>STG</b>	Steam Turbine Generator
<b>SWAS</b>	Steam and Water Analysis System
<b>TAPH</b>	Tubular Air Preheater
<b>TDS</b>	Tax Deducted at source
<b>TeS</b>	Technical Score



## Disclaimer

This RFP is being issued by the Gujarat Mineral Development Corporation Ltd (GMDC) (hereunder called "Authority"/ "GMDC") to the Bidders interested in providing operations and maintenance services for 250 (2\*125) MW lignite based Akrimota Thermal Power Project in Kutch District, Gujarat.

It is hereby clarified that this RFP is not an agreement, and the purpose of this RFP is to provide the Bidder(s) with information to assist in the formulation of their proposals/Bids. While the RFP has been prepared in good faith with due care and caution, GMDC does not accept any liability or responsibility for the accuracy, reasonableness, or completeness of the information, or for any errors, omissions, or misstatements, negligent or otherwise, relating to any feasibility / detailed project report or any other reference document mentioned, implied, or referred herein. This RFP may not be appropriate for all persons. It is not possible for GMDC to consider the investment objectives, financial situation and particular needs of each Proposer/Bidder who reads or uses this RFP. Each Proposer/Bidder should conduct its own investigations and analysis and should check the accuracy, reliability, and completeness of the information in this RFP and where necessary obtain independent advice from appropriate sources.

Bidder should carefully examine and analyze the RFP and bring to the notice of GMDC any error, omission, or inaccuracies therein that are apparent and to carry out its own investigation with respect to all matters related to the captioned subject, seek professional advice on technical, financial, legal, regulatory and taxation matters and satisfy himself of consequences of entering into any agreement and / or arrangement relating to the captioned subject. GMDC and its employees make no representation or warranty, express or implied, and shall incur no liability under any law, statute, rules, or regulations as to the accuracy, reliability or completeness of the information contained in the RFP or in any material on which this RFP is based or with respect to any written or verbal information made available to any Proposer or its representative(s).

GMDC may in their absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this RFP as per its requirements. GMDC reserves the right not to proceed with the project, to alter the timetable reflected in this document or to change the process or procedure to be applied. It also reserves the right to decline to discuss the Project further with any Party submitting a Proposal. No reimbursement of cost of any type will be paid to persons, entities submitting a Proposal/Bid.

The Bidder shall bear all costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by GMDC, or any other costs incurred in connection with or relating to its Bid, regardless of the conduct or outcome of the Bidding process.

## Part 1: Introduction

### 1. Background about GMDC

Gujarat Mineral Development Corporation Ltd (GMDC) is a leading state-owned mining and minerals company in the western Indian state of Gujarat with operational experience spanning nearly 50 years. GMDC is a zero-debt company listed on national and Bombay Stock Exchanges. The Government of Gujarat (GoG) disinvested 26% stake to the public shareholders vide an IPO in 1997 while the balance Ownership is held by the Government of Gujarat.

GMDC's product portfolio spans across mining, value added products, and power, with mining activities spread across the state of Gujarat in districts Kutch, Devbhoomi Dwarka, Panchmahal, Vadodara, Bhavnagar, Bharuch, Surat and Chotaudepur. It currently mines Lignite from five operational mines, with five upcoming mines in the pipeline, and other minerals including Bauxite, Fluorspar, Manganese, Ball Clay, Silica Sand, Bentonitic Clay, and Limestone. It provides value added services through works such as Pyrite removal from Lignite, Beneficiation of Bauxite, low-grade Manganese, and Fluorspar.

To leverage its experience in mining operations, GMDC has set up a diversified power portfolio with forward integration into a 2X125 MW lignite-based thermal power Plant in Nani Chher, Gujarat, and clean energy sources including 200.9 MW of Wind power assets in Maliya, Jodiya, Gorsar, Bhanvad, Bada, Varvala, Rojmal, and a 5 MW Solar power project in Panandhro.

### 2. Plant details

#### 2.1 Background about ATPS

GMDC has been operating a 250 MW lignite-based thermal power Plant (Akrimota Thermal Power Station, ATPS) over the past 15 years. ATPS has two units of 125 MW each commissioned in July 2006, and March 2007 respectively.

ATPS procures lignite required for generation of power from GMDC's mines (Mata na Madh, and Umarsar) located at proximity (~60 km) and transported directly to the Plant via road. Furthermore, the water supply to the power Plant is ensured through nearest Kori creek (through 1.4 km long sea water intake channel).

ATPS has a long-term power purchase agreement with GUVNL for supply of power till 2036, for the recovery of fixed charges and variable charges as per the actual Plant performance parameters (net availability, station heat rate, auxiliary power consumption).

#### 2.2 Technical specifications

The broad process flow diagram for the Plant indicating the key systems has been illustrated in Annexure 3.

##### 2.2.1 Boiler, ESP, and Auxiliaries

ATPS has circulating fluidized bed combustion (CFBC) boilers in both units, supplied by Alstom (later acquired by GE) at the time of commissioning.

The key technical and design specifications for the boiler and associated auxiliaries, and the current specifications of the electrostatic precipitator (ESP) as per the OEM design and commissioning documents have been detailed in Part A of Annexure 1.

ATPS has placed an order for upgradation of ESP to meet the new statutory norms. ATPS has also placed a contract for annual overhauling of boiler after carrying out a residual life assessment study of both the boilers.



Key ideal process parameters have been detailed in Part A of Annexure 2. The layout for the same is mentioned in Annexure 3.

### **2.2.2 Turbine and Generator**

ATPS has electro-hydraulic steam turbines (125 MW, 3000 rpm) in both units, supplied by Ansaldo at the time of commissioning. The turbines are designed for a useful life of over 30 years, subject to proper operations and maintenance.

ATPS has placed an order for capital overhauling of both the turbines under Ansaldo supervision.

The key technical and design specifications for the turbine, generator, and associated auxiliaries, as per the OEM design and commissioning documents have been detailed in Part B of Annexure 1.

Key ideal process parameters have been detailed in Part B of Annexure 2. The layout for the same is mentioned in Annexure 3.

### **2.2.3 DCS and Instrumentation**

ATPS C&I systems have been supplied by ABB, with certain minor systems supplied by Honeywell. ATPS has placed an order on M/s Honeywell for complete re-vamping of the DCS instrumentation system.

The key technical and design specifications for the DCS instrumentation and associated auxiliaries, as per the OEM design and commissioning documents have been detailed in Part C of Annexure 1.

Key ideal process parameters have been detailed in Part C of Annexure 2. The layout for the same is mentioned in Annexure 3.

### **2.2.4 Material Handling Plant**

ATPS procures lignite GMDC's mines (Mata na Madh and Umarsar) and is transported directly from the mines to the Plant via road. There is a designated yard for storage of lignite received from the mines, and currently, all ash generated by the Plant is being transported to Panandhro mine. Complete material handling system has been installed by M/s TRF, with key systems such as Lignite primary and secondary sizers supplied by Mining Machinery Developments Ltd. Key systems associated with material handling include – lignite handling plant, ash handling plant, lime handling plant, cranes and hoists installed across the plant. The layout for the same is mentioned in Annexure 3.

The key technical and design specifications for key sub-systems associated with MHP, as per the OEM design and commissioning documents have been detailed in Part D of Annexure 1.

Key ideal process parameters have been detailed in Part D of Annexure 2.

### **2.2.5 Balance of Plant**

Balance of Plant includes condenser, compressor, pumps, cooling tower, sea-water treatment Plant and other miscellaneous auxiliaries.

The key technical and design specifications for balance of plant, as per the OEM design and commissioning documents have been detailed in Part E of Annexure 1.

Key ideal process parameters have been detailed in Part E of Annexure 2. The layout for the same is mentioned in Annexure 3.



### 3. Context of RFP

#### 3.1 Intent of specification

The intent of this specification is to select a Successful Bidder which would be responsible for operations and maintenance of GMDC's 2X125 MW Akrimota Thermal Power Station (ATPS) according to the terms of reference / scope of work detailed in Part 2 of this document.

The Successful Bidder shall achieve the performance parameters stipulated in Annexure 4 of this document and KPI targets as mentioned in Section 7.1 part 2 of this document, towards successful execution of Operations and Maintenance responsibilities.

The scope of work for the Successful Bidder shall include comprehensive operations and maintenance of the power plant to generate power in accordance with the standard guidelines of OEM, Prudent industrial practice, and Thermal Power Plant along with supply and management of spares, consumables, raw material, and tools and tackles, manpower, required services, Annual maintenance contract, Annual Rate contract etc.

The Successful Bidder shall conform in all respects to the highest standard of operations, maintenance, engineering, quality, and workmanship so that both, during the operations and after that, the plant shall be capable of operating safely, reliably, and sustainably in a manner acceptable to the Owner.

#### 3.2 Plant visits

The Bidders are invited to visit the Plant and understand the equipment installed and their working conditions, prior to submission of the Bids. The objective of the plant visits shall be to understand the scope of work, feasibility of execution, and make the Bidders fully conversant with the job, site conditions, constraints, and collect all information as required and as available before quoting against this specification.

The Bidders can schedule their visit to the Plant by providing prior intimation to the Owner (via e-mail) along with the list of visitors from the Bidding Entity to ensure ease of coordination and availability of key personnel.

The visits are compulsory. The Bidder shall submit a plant visit plan to the Owner indicating the timelines and the key personnel visiting, for prior consent and approval. The Owner shall facilitate the visits for the Bidders and make necessary arrangements at the plant. The cost of the plant visit, including transportation and accommodation, shall be borne by Bidder.

In this context, GMDC is looking for a partner for comprehensive operations and maintenance of the plant and is inviting Bids from bona fide and experienced Bidders of financial standing, reputation, and providing such services across India, for the following job:

<b>Name of work:</b>	Request for Proposal (RFP) for Comprehensive Operations and Maintenance Partner for GMDC's 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat
<b>RFP No.:</b>	GMDC/Power/ATPS/19/23-24

## Part 2: Terms of reference / Scope of Work

### 1. Definitions of the terms and conditions of the RFP

#### a) Definitions

For the purpose of the Contract, the following words and expressions in this Section shall have the respective meanings set forth below:

**“Annual Operating Plan”** shall mean the plan prepared by Successful Bidder for operations of entire 2X125 MW thermal power Plant for the upcoming year. The plan should be submitted to the Owner for approval and the work of the Successful Bidder will start only post the approval from the Owner.

**“Applicable Laws”** shall mean all laws, treaties, ordinances, rules, regulations applicable in India and amendments, re-enactments, revisions, applications, and adaptations thereto made from time to time and in force and effect, judgments, decrees, injunctions, writs and orders of any court, arbitrator or governmental agency or authority, rules, regulations, orders and interpretations of any Governmental Instrumentality, court or statutory or other body having jurisdiction over construction of the Plant, performance of the Work or supply of Goods, operation and maintenance of the Plant, including Applicable Permits, as may be in effect at the time of performance of work or supply of Goods hereunder by the Bidder, which time would include Latent Defects Period as appropriate, provided, however, that if at any time the Applicable Laws are less stringent than the standards set forth in the Contract hereto, the standard set forth in the Contract hereto shall be deemed to be the standards under Applicable Laws.

**“Applicable Permits & Clearances”** shall mean any and all Permits, Clearances, Authorizations, consents, licenses (including without limitation any import or export licenses), lease, ruling, exemption, filing, agreements, or Approvals, required to be obtained or maintained in connection with construction of the Plant, performance of Work, and the operation of the Plant respectively by the Bidder and the Owner in accordance with the Contract and their maintenance, as may be in effect at the time of Bidder's supply of Goods hereunder; which time would include Latent Defects Period as appropriate.

**“Approval”** shall mean the written approval of the Owner and of the statutory authorities, wherever such authorities are specified by any codes or otherwise.

**“Arbitration Act”** shall mean Arbitration and Conciliation Act, 1996, or any amendment or re-enactment thereof.

**“Authorization”** shall mean approvals required under Applicable Law.

**“Bid”** shall mean the offer of the Bidder to the Owner in response to the Bid Enquiry

**“Bidder”** shall mean single corporate entity Bidding for the Contract for Strategic Successful Bidder for GMDC's (2x125) 250 MW Akrimota Thermal Power Station.

**“Bidder Permits”** shall mean all Permits, required by the Bidder from any Government Instrumentality for the performance of his obligations.

**“Bidder's Representative”** shall mean the person named as such in the Contract or other person appointed and from time to time communicated to the Owner by the Bidder in his place in accordance with the terms of the Contract.

**“Bid Security/Earnest Money Deposit (EMD)”** shall mean the security provided by the Bidder to the Owner along with the Bid.

**“Commencement Date”** shall be the date within 30 (thirty) days of submission of the Successful Bidder's acceptance of the Letter of Award (LOA).

**“Contract”** shall mean the documents as set out in the form of Contract Agreement as may be amended, supplemented, or modified from time to time by agreement in Writing between the Parties.

**“Contract Period”** shall mean the period from the Commencement Date up to and including the last day of the Contract.

**“Documents”** shall mean and includes all design documents, engineering documents, Drawings, calculations, computer software (programs), computer media, samples, patterns, models, construction documents, erection documents, Operation and Maintenance Manuals, and other manuals, and the like as well as, all other data and information to be submitted by the Bidder and shall include without limitation, engineering, design and construction drawings, data sheets, specifications, plans, bills of Materials and estimates.

**“Governmental Authority”** shall mean the Government of India, the state government, any local authority constituted under an act of legislature, and any other authority exercising any power or function in pursuance of an act of legislature, or any rules and regulations made there under, and any successor thereof having legal jurisdiction over the matter or person in question.

**“Goods”** shall mean all the equipment, machinery, apparatus, appliances, components and/or other Materials and things, which the Vendors are required to supply to the Owner under the Contract.

**“Good Industry Practice / Prudent Industry Practice”** shall mean those practices, methods, acts, techniques and standards as may be followed or employed in the performance of the Work or supply of Goods and discharge of its obligations by the Bidder and which (i) are generally accepted internationally for use in the electric utility industry, taking into account conditions in India, in connection with power stations of the same or similar size and type as the Plant, (ii) are commonly used in prudent electric utility engineering, construction, project management and operations, and (iii) would be expected to result in performance of the Services and completion of Works in a manner consistent with Applicable Laws, Applicable permits, reliability and safety.

**“GUVNL”** shall mean Gujarat Urja Vikas Nigam Limited

**“Lumpsum Charges for Operations and Maintenance Package”** shall mean the comprehensive operations and maintenance charges payable by the Owner to the Bidder in respect of execution of all the services and supply of spares as indicated in Section 3 of Part 2 in this document.

**“Maintenance Plan”** shall mean a comprehensive maintenance plan that will be prepared by the Successful Bidder for the upcoming year that will contain schedule and basic description of work to be performed for all preventive maintenance, annual overhauls, breakdown maintenance steps etc.

**“Material Inventory Management Plan”** shall mean a plan submitted by Successful Bidder that contains inventory management plan for all materials including (fuel, chemicals, consumables, tools, tackles, and spares) for the upcoming year.

**“Notice in Writing”** or **“Written Notice”** shall mean a Notice in Writing, typed, or printed or handwritten characters, sent (unless delivered personally or otherwise proved to have been received) by registered post or by electronic transmission to the last known private or business address or registered office of the addressee and shall be deemed to have been received when in the ordinary course of post or by electronic media it would have been delivered.

**“Overhaul”** shall refer to any planned major maintenance being undertaken for the 2X125 MW Akrimota Thermal Power Station to enhance performance and reliability of the asset.



"**Owner**" shall mean Gujarat Mineral Development Corporation Limited hereinafter referred to "GMDC", in its capacity as Owner and shall include its successors and assigns, as well as authorized officers.

"**Owner's Representative**" shall mean the person appointed by the Owner from time to time and notified as such to the Bidder to act as Owner's Representative for the purposes of the Contract.

"**Party**" shall mean Owner or Bidder individually and "Parties" means Owner and Bidder collectively.

"**Personnel**" shall mean employees/personnel engaged by the Bidder who are based in India and are directly or indirectly engaged by the Bidder in the performance of the Bidder's obligations under this Agreement at the Plant.

"**Plant**" shall mean the 2X125 MW lignite based thermal power Plant operated by GMDC in Akrimota (Akrimota Thermal Power Station, ATPS), comprising of 2 units of 125 MW each.

"**Successful Bidder**" shall mean the Bidder who is selected by Authority / GMDC for operations and maintenance of GMDC's 2X125 MW Akrimota Thermal Power Station (ATPS) and shall include such Successful Bidder's legal representatives, successors and permitted assigns.

"**Willful Default**" shall mean an intentional or reckless breach or/ and omission by a Party of any of its obligations under the Contract.

## **b) Interpretation**

Words importing Persons or Parties shall include related firms and corporations and any organization having legal capacity. Words importing the singular also include the plural and vice versa where the context requires. Words importing one gender also include other genders.

Unless inconsistent with the provisions of the Contract, the meaning of any shipping terms and the rights and obligations of the Parties there under shall be as set forth in the latest International Chambers of Commerce (ICC) official rules for interpretation of trade terms as per "INCOTERMS 2020."

## **c) Law, language, and measurements**

Applicable Law to this Contract shall be the Indian Law. The respective rights, privileges, duties and obligations of the Owner and the Successful Bidder under the Contract shall be governed and determined by the Laws of State and of the Republic of India.

All correspondence, information, literature, data, manuals, definitive documents, notices, waivers, and all other communication, written or otherwise, between the Parties in connection with this Contract shall be in English. The official text of this Contract shall be English.

All measurements shall be in metric system.

## **d) Stamp duty and similar charges**

The costs of stamp duties and similar charges imposed by law on the Contract or Agreement, or any part thereof shall be borne by the Successful Bidder.

## **e) Commencement of Contract**

The Successful Bidder, along with the payment of Performance Security, will enter into a Contract with the Owner on appropriate Stamp Paper (to be provided by the Successful Bidder) in token of acceptance of the terms and conditions of the contract, within 30 (thirty) days of submission of its acceptance of the Letter of Award (LOA). In case of any necessity



arising after executing the Contract and during the execution of the work, which requires alteration/modifications in the Contract, the same can be made in writing by either party, after mutual understanding and consent of both the parties. The Successful Bidder will have to start the work as per the Scope of Work described in the Section 3 of Part 2 of this document, on 1st January 2025 or as communicated in advance by the Owner, post award of the contract (work to start on 1st January 2025 or within 30 days post 1st January 2025). In addition, the Successful Bidder needs to deploy key personnel during the final 15 days of the overhaul of ATPS plant basis mutual discussion and agreement between the Successful Bidder and the Owner post award of contract. In case of failure to commence the work within the abovementioned period, the liquidated damages shall be levied as per the provision of Section 7.2 of Part 2 of this document.

**f) Successful Bidder's use of Owner's documents**

Copyright in the documents owned by the Owner and other documents issued by the Owner to the Successful Bidder shall (as between the Parties) remain the property of the Owner. Ownership in all documents provided by the Successful Bidder to the Owner pursuant to the Contract including design, engineering, drawings and works layout (but excluding proprietary information and Manuals provided by Vendors of equipment for use of the Owner) shall vest with the Owner. The Successful Bidder may, at its cost, copy, use and communicate any such documents for the purposes of the Contract. They shall not, without the Owner's consent, be used, copied, or communicated to a third-party by the Successful Bidder, except as necessary for the purposes of the Contract including performance of Work or supply of Goods.

In performing its obligations under this contract, the Successful Bidder shall not use in connection with the performance of the work, any material, equipment, methods, processes, systems, or service that involve the use of any confidential information, intellectual property, or proprietary rights that Successful Bidder does not have the right to use or incorporate.

The Successful Bidder shall indemnify the Owner in case of breach of this Section by the Successful Bidder. If these Documents are received by a third-party from the Successful Bidder and the third-party makes use of these Documents to cause harm or monetary loss to the Owner or use these Documents for their personal gain / monetary gain, the Successful Bidder shall compensate the Owner for the loss suffered as well as for the value of gain derived by third-party.

**g) Confidential details**

The Successful Bidder shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out his obligations hereunder. The Successful Bidder shall not publish, permit to be published, or disclose any particulars of the Contract in any trade or technical paper or elsewhere without the previous consent in writing of the Owner and at the Owner's sole discretion.

The Successful Bidder shall indemnify the Owner in case of breach of this Section. If the confidential details relating to this Contract or its contents are received by a third-party from the Successful Bidder and the third-party makes use of these details to cause harm or monetary loss to the Owner or use these Documents for their personal gain/ monetary gain, the Successful Bidder shall compensate the Owner for the loss suffered as well as for the value of gain derived by the third-party. The Successful Bidder shall not use the confidential details of the Contract for any other purpose except for the strict purpose of this Contract.

## 2. Appointment of Successful Bidder

### a) Appointment terms

Based on the results of this Bid as per the evaluation criteria mentioned in Section 5 of Part 3 of this document, the Owner shall appoint the Successful Bidder, and the Successful Bidder shall accept the appointment to deploy skilled, qualified, and competent manpower, and necessary systems, infrastructure, equipment, spares, system, software, and tools as required for efficient execution of the O&M services to the terms and conditions mentioned in the Contract.

In case of requirement of execution of additional work as part of the scope of work detailed in Section 3 of Part 2 of this document during the Contract period, the Successful Bidder shall be responsible to execute such additional work during the Contract period at the same rate finalized for the respective works. No escalation in the rate of the works for such additional work during the contract period shall be considered.

In case of a requirement of other works which are not covered in the scope of work detailed in Section 3 of Part 2 of this document, but the same is necessary for smooth operations and maintenance of the Plant, the Successful Bidder may be assigned that work at the lowest rate derived and mutually agreed between the Successful Bidder and the Owner.

The MD is authorized to take suitable decision and action in case of requirement to amend/alter the contract conditions/quantities of the works/ extension of the contract period/allotment of additional works/revision of the rates of the work etc., if necessary, in the interest of the Owner.

### b) Duration of the Contract

The Contract shall be deemed to have come into force and effect 30 (thirty) days from the date of acceptance of the Letter of Award (LOA) by the Owner to the Successful Bidder and the Successful Bidder shall provide operations and maintenance services along with supply of spares and consumables as covered in but not limited to Section 3 part 2 for a period of 3 years from the start of work as per the scope of work defined in this RFP. Further, there shall be a provision of extension for up to 2 years, as per the same terms and conditions solely based on the performance of the Successful Bidder and at the discretion of the Owner. The pricing and the escalation rate for the extended period will be mutually decided between the Owner and the Successful Bidder at that point of time.

The Contract shall be deemed to be successfully executed after the duration of contract, as certified by competent authority from the Owner. The Successful Bidder shall strive to complete the execution and meet the performance targets as defined in section 7.1 of part 2 however, in case of a deviations from targets, the Owner reserves the right to levy penalties/liquidated damages as described in Section 7.2 of Part 2 of this document.

## 3. Scope of Work

The main scope of work for the Successful Bidder is to operate, maintain and repair the 2x125 MW Power Plant and all its equipment for power generation and transmission line up to the 220KV switchyard in accordance with the recommendations of the Owner, original equipment manufacturer (s), Off-taker instructions and prudent utility practices of power projects so that the power plant runs in an economical and efficient manner without adversely affecting the life of the power plant. The Successful Bidder shall optimize the long-term profitability of the power plant (keeping in view the norms of the regulator) by maximizing Plant Availability (PAF), PLF (Plant Load Factor) and minimizing the Station Heat Rate and Auxiliary Power Consumption, minimizing the Secondary Fuel Oil Consumption(SFOC), minimizing the incidence, severity, and duration of forced outages, and keeping the power plant in healthy, good order and protecting it from damage, premature deterioration, or



malfunction. The detailed scope of work is listed below and is only indicative. However, any works related to operate & maintain the facility in efficient and effective manner for generating electrical energy at rated capacity of 2x125 MW at generator terminals not exclusively mentioned but required for executing this contract as per prudent utility practices shall be under the scope of the Successful Bidder.

1. The Successful Bidder shall be responsible for carrying out the complete work of Main Control Room Operation, all other Control Room Operations and Field Operations for the power plant by deploying qualified, experienced, trained, and certified (as per statutory requirements) engineers/personnel, for operation of Thermal Power Plant in various disciplines pertaining to such a plant. The Boiler, Steam Turbine, Generator shall be operated in accordance with OEM manuals, IEGC (Indian Electricity Grid Code), Applicable Grid Code, Applicable GERC, CERC, CEA guideline, circular, notice, Environmental regulations, HSEQ (Health, Safety, Environment and Quality)
2. The Successful Bidder must deploy required manpower with appropriate qualification to perform smooth operations and maintenance of power plant (an indicative list is given in Annexure 5).
3. The Successful Bidder must prepare and submit to the Owner, Annual Operating Plan, Maintenance Plan and Material Inventory Management Plan, which will be mutually agreed.
4. The Successful Bidder must carry out the dispatch instructions set out in the PPA and assist GMDC in making availability declarations and submitting invoices under the PPA.
5. The Successful Bidder must supply all materials as required for the smooth operation and maintenance of the power Plant. The Bidder shall be liable for warranty of any such material supplied along with all the required processes.
6. The Successful Bidder must manage fuel including unloading, handling and storage, inspection, unloading from trucks till consumption with required vehicles. The Successful Bidder shall maintain all equipment necessary for smooth handling of fuel and as per Owner's instructions.
7. The Successful Bidder shall be responsible for handling coal in the Stacker Reclaimer area and unloading area and required dozer operators along with its O&M maintenance.
8. The Successful Bidder shall be responsible for unloading of HFO & LDO tankers and / or Oil Rakes (manual / with unloading pumps) to respective tanks. The Successful Bidder shall have adequate arrangement of labor and T&P for manual unloading of trucks.
9. The Successful Bidder must maintain coal stocks up to designed capacity of coal stock yard, in each case to minimize coal losses and coal degradation, including from windage and runoff. Demurrage charge if any will be in the Successful Bidder's scope.
10. The Successful Bidder must carry out planning and organization of maintenance activities for execution of Breakdown Maintenance, Routine Maintenance, Predictive Maintenance, Preventive Maintenance and Condition Based Monitoring, etc. including ensuring arrangement of all necessary tools-tackles, consumables, any additional manpower required. The Successful Bidder should submit a PM schedule before the start of work that should be aligned with the Owner. This will be then considered for calculation of KPIs.
11. All the above-mentioned operation and maintenance to be done on time and equipment are to be maintained in healthy condition. In case of planned shut down or



- major system failure or equipment breakdown the Successful Bidder must deploy required work force in addition to the minimum mentioned manpower to complete the jobs on time.
12. All type of bulk chemicals required for Boiler, CW System etc. (ensuring no excess consumption due to maloperation/defective workmanship) including chemicals/reagent required for lab testing purpose shall be borne by the Successful Bidder.
  13. All OEM/ Owner approved Preventive Maintenance and other Annual Maintenance schedule across all major and critical Equipment is in Successful Bidder's scope. The Successful Bidder is responsible for carrying out all the maintenance as per schedule that is agreed upon by Owner and Successful Bidder before start of the contract.
  14. The Successful Bidder will be entirely responsible for organizing and managing such contracted and subcontracted maintenance, repair and testing services as shall be required to carry out scheduled inspections, overhauls and major breakdown repairs including the statutory overhauls (Annual Overhauling of Boiler, Turbine, Generator, Auxiliaries and Utility systems, Capital Overhauling of Plant equipment).
  15. The Successful Bidder must carry out material planning (including spares), supply, indentation, receipt of material including quality checks, storage and maintenance of required stock including reverse engineering, inventory control, etc. to ensure that the plant performance is not jeopardized by lack of spares availability. Any demurrage charges occurred during unloading shall be borne by the Successful Bidder.
  16. The Successful Bidder shall arrange and provide the service engineer(s) of OEM at the Plant to associate at site for O&M and bear all expenses for the same.
  17. The Successful Bidder shall undertake coating or lining activities in all pipelines i.e., MS pipeline. The Successful Bidder shall undertake cement mortar lining and corocoating inspection and repair activities up to a limit of Rs. 20 Lakhs every year for Operating Period, which will be considered as the pre-approved budget. For works exceeding Rs. 20 Lakhs per year for the Operating Period, the successful bidder will need to take prior approval from the Owner along with proper reasoning and reports for the same. In case this amount is approved by the Owner, the Owner shall reimburse the costs incurred to the Successful Bidder. For clarification, reconciliation will be done on yearly basis based on evidence on materials, services & additional items procured towards these activities produced by the Successful Bidder and adjusted in the last month of each year of Operating Period. There shall be provision for discussion on ceiling caps for next year also during the meeting based on which subsequent years will be revised. However, it may be noted that all coating and lining activities in all pipelines i.e., MS pipelines, including but not limited to cement mortar lining and corocoating inspection and repair activities will be in the scope of the Successful Bidder.
  18. The Successful Bidder must supply and maintain equipment not available in the Workshop and labs store but are required for smooth O&M of Plant. (Mechanical, Electrical, C&I, and Chemical)
  19. The Successful Bidder shall be responsible for O&M of sea-water intake system including underground piping.
  20. The Successful Bidder shall enter into AMCs of major equipment(s) with its OEM as per operating manuals and also bear all expenses for the same with the concurrence of the Plant head.
  21. The Successful Bidder must maintain, control and store inventory, receive and stock (including unpacking and packing of materials), as appropriate and applicable, utilities,



- water, coal and secondary fuel, spare parts, tools, supplies, chemicals, lubricants, and other consumable materials as mutually agreed with the Owner. The Successful Bidder must man the stores to perform and record inward and outward activities. The Successful Bidder must take the guidance / directions from the Owner representative to perform the functions of inventory management.
22. The Successful Bidder must dispose Ash as per requirement within plant and outside plant including ash transportation and load Fly Ash and Bottom Ash for sales.
  23. The Successful Bidder shall be responsible for segregation and disposal of scraps / waste as per the requirements, and as per Owner procedures.
  24. The Successful Bidder shall be responsible for disposal of wastewater / sewage / solid waste as per MoEF guidelines at a designated location within plant boundary limits. Operation and Maintenance of wastewater system / STP shall be done by the Successful Bidder.
  25. The Successful Bidder shall be responsible for overhauling / preventive maintenance of LT and HT motors including removal, replacement, transportation, shifting, alignment etc. The rewinding / repair of LT motors from the Owner's approved vendors shall be responsibility of the Successful Bidder. However, rewinding / repair of HT motors shall be arranged by the Owner.
  26. The Successful Bidder must maintain good housekeeping of all plant areas and equipment including gardening, landscaping, cleaning of pits, sumps, drains, and adhere to environmental compliance. The Successful Bidder must assist Owner to report environmental performance to authorities as required by the license or any other laws.
  27. The Successful Bidder must develop (bilingual), operate and follow all the Technical and Non-Technical Standard Operating Procedures (SOPs), Standard Maintenance Procedures (SMPs) covering all operational interfaces between Owner, location smelters/mines, service provider and SEB (state electricity board), OEM Manuals, Health, Safety & Environmental (HSE) Guidelines, Integrated Management System (IMS), Energy Management System (ENMS), and Guidelines of Owner and provide reports and information as mutually agreed.
  28. The Successful Bidder must prepare and maintain daily log sheets, operational logs, maintenance records, records / reports for all plant operations including field operations, and documents for equipment faults and outages, materials, and consumables usage, maintaining records for Plant performance, accounting books and records of the Plant.
  29. The Successful Bidder must prepare and submit to the Owner, O&M Procedures, Annual Operating Plans, Annual Budget and Maintenance Plans, Annual Shutdowns Reports / Intermittent Breakdown Reports, etc. as approved by Owner to ensure that the plant is operated and maintained in a way that optimizes its technical and commercial performance.
  30. The Successful Bidder must run administrative systems which will provide accurate records of all technical parameters like power supplied, efficiency, plant records, stores, contracts, and other matters as required.
  31. The Successful Bidder shall maintain any necessary additional software support required to maintain & update documentation / planning.
  32. The Successful Bidder must operate and maintain all metering/logging equipment/instruments and perform inspections, calibrations & testing (including

- calibration of plant metering, instruments, own tools & test equipment, and devices), compliance to traceability to NABL Accreditation/ National/ International Standards.
33. The Successful Bidder must operate the equipment in consistent with the technical limits and Prudent Industry Practices taking all reasonable corrective actions approved by the Owner to achieve the same, in each case.
  34. The Successful Bidder must perform yearly energy audits for improvement in performance of the plant and carry out works of analysis, documentation and performance improvement for performance achievement related to obligations. The Successful Bidder will also arrange for consultancy services for relay setting and power system stabilization, Boiler combustion tuning etc. whenever needed.
  35. The Successful Bidder is responsible for operation and maintenance of all instrumentation and controls equipment in the plant.
  36. The Successful Bidder is responsible for general civil works including repairs and maintenance, carpentry in plant premises. The Successful Bidder will undertake minor civil works including repair & maintenance, carpentry, touch up painting including painting up to a limit of INR 50 lakhs per year of Operating Period, which will be considered as the pre-approved budget. For major civil works, the successful bidder will need to take prior approval from the Owner along with proper reasoning and reports for the same. In case this amount is approved by the Owner, the Owner shall reimburse the costs incurred to the Successful Bidder. For clarification, reconciliation will be done on yearly basis based on evidence on materials, services & additional items procured towards these activities produced by the Successful Bidder and adjusted in the last month of each year of Operating Period. There shall be provision for discussion on ceiling caps for next year also during the meeting based on which subsequent years will be revised. However, it may be noted that all civil and other repairs involving capital expenditure will be in the scope of the Successful Bidder.
  37. The Successful Bidder must operate and maintain the plant in accordance to produce the most efficient heat rate and efficiency of the plant and to minimize the overall operating and maintenance costs (including fuel & inventory costs) of the plant.
  38. The Successful Bidder must operate and maintain the plant in accordance to not cause any outage, except for the scheduled outages and to minimize the scheduled outages. The Successful Bidder must perform RCA, CAPA, improvement initiatives (Kaizen, SGA, FIP) to achieve the same and for better performance/availability of the Plant.
  39. The Successful Bidder must notify the Owner immediately for discovery of any unusual adverse operating condition or characteristics and suggest remedial actions (if any) needed to maintain or improve performance.
  40. The Successful Bidder must notify Owner promptly upon obtaining knowledge of any event or casualty which may be claimed under an insurance policy of the Owner, or the Successful Bidder (under insurance maintained pursuant to this O&M scope or any of the other Agreements).
  41. The Successful Bidder must prepare information as requested or directed by Owner related to plant operations (including updating the 'as built' drawings) and costs required by Owner to submit insurance claims and assist Owner in submitting and pursuing such claims.
  42. The Successful Bidder must ensure safety as per applicable laws and maintaining highest safety standards (as mentioned in Annexure 6 but not limited to it) for all its employees and all other personnel who are working for and on behalf of the Successful Bidder.



43. The Successful Bidder must comply with all applicable statutory/ legal/ environmental requirements and Owner standards & systems and assist Owner in reporting the same to authorities.
44. The Successful Bidder must conduct or attend and witness the reading and testing of the meters required or permitted to be carried out or conducted pursuant to the PPA and execute required subsequent procedures. The Successful Bidder must attend meetings with the Owner and such other persons as Owner may specify from time to time with a reasonable notice.
45. The Successful Bidder must obtain and maintain Permits required to be obtained for plant O&M requirements.
46. The Successful Bidder must maintain personnel policies in relation to operation and maintenance throughout the term of agreement.
47. The Successful Bidder is wholly responsible for its employees and all other personnel who work for and on behalf of Successful Bidder including but not limited to, all the applicable statutory obligations like ESI, PF, welfare amenities, uniforms, PPE, first aid kits, medical requirements, individual and group Insurance etc.
48. The Successful Bidder must provide first aid equipment for on-site emergency medical treatment.
49. The Successful Bidder must provide legal, HR, payroll, and accounting etc. services with respect to its staff.
50. Successful Bidder is responsible for training and development of their staff as per Owner guidelines. Provide on-going and refresher training (technical, safety performance, skill, fire, first-aid, and emergency procedure) on-site/off-site for all its staff.
51. Procurement, supply, and handling of all consumables are in Successful Bidder's scope. The annual consumables procurement plan for the first year will be submitted by the Successful Bidder after reviewing available consumables and maintenance schedules, based on which the annual budget for consumables will be approved by the Owner. The supply schedule should match the power plant requirement to maintain upmost plant availability and operational efficiency. The Successful Bidder needs to buy consumables from OEM or Owner approved vendors and submit necessary test certificates/ quality certificates as per Owner's guidelines. The Successful Bidder shall deploy necessary third party for inspection/ testing of consumables procured. Similar mechanism will be applicable for the remaining 2 (two) years.
52. In case of consumables not being required / utilized during the operating year as per the approved budget, the remaining amount from the approved budget will be reimbursed to the Owner by the Successful Bidder. Similar mechanism will be applicable for the remaining 2 (two) years.
53. The consumables procurement plan for the first year would be reviewed on all monthly review meetings. The Successful Bidder shall provide a detailed report on the consumption of consumables along with the justification for the consumption on monthly basis. The consumption pattern will be compared with past years or best practices and changes to be mutually discussed. In case, any major deviations, the Successful Bidder shall take the requisite steps to correct the same. The Successful Bidder shall deposit all types of consumables which have residual value in stores from time to time. These items shall be the property of the Owner and shall be disposed of by the Owner as deemed fit. Similar mechanism will be applicable for the remaining 2 (two) years.



54. Procurement, supply, and handling of all spares are in Successful Bidder's scope. The payment for spares will be pass-through and reimbursed to the Successful Bidder 30 days post submission of proforma invoice along with necessary documents supporting purchase of goods and approval of the invoices by the Owner. The spares procurement plan for the first year will be submitted by the Successful Bidder after reviewing available spares and maintenance schedules. The supply schedule should match the power plant requirement to maintain utmost plant availability and operational efficiency. The Successful Bidder needs to buy spares from OEM or Owner approved vendors and submit necessary test certificates/ quality certificates as per Owner's guidelines. The Successful Bidder shall deploy necessary third party for inspection/ testing of spares procured. Similar mechanism will be applicable for the remaining 2 (two) years.
55. There shall be an overall capping to the annual spares' expenditure in line with company budget and the spares procurement plan submitted by the Successful Bidder, which would be mutually decided between the Owner and the Successful Bidder and will be carried forward every year. In case of spares purchase request exceeding the approved budget, the Successful Bidder would need explicit approval from Owner providing reasons for the same. However, in case this request is for critical spares (list to be given to the Successful Bidder post award of the contract) or for any spares which will affect the plant availability and operational efficiency, there will be an accelerated approval process (within 24 hours) for the same. There shall be a provision for discussion on ceiling caps for the next year also in the meeting based on which, requirement for subsequent years shall be revised.
56. The spares procurement plan would be reviewed on all monthly review meetings. The Successful Bidder shall provide a detailed report on the consumption of spares along with the justification for the consumption on monthly basis. The consumption pattern will be compared with past years or best practices and changes to be mutually discussed. In case, any major deviations, the Successful Bidder shall take the requisite steps to correct the same. The Successful Bidder shall deposit all types of replaced spares which have residual value in stores from time to time. These items shall be the property of the Owner and shall be disposed of by the Owner as deemed fit. However, the Successful Bidder shall strive to utilize the replaced spares by reconditioning to the extent possible and only in the vent of complete non-utilization, the material can be termed as scrap with the concurrence of the Owner.
57. The Successful Bidder shall procure and implement PTW, LOTO and maintenance software for PM, CBM and corrective maintenance at his own cost.
58. The Successful Bidder shall operate and maintain all the equipment supplied as facilities i.e., lifts, elevators, cranes, hoists, chain pulley blocks, hydra, forklift, JCB, etc. Maintenance of these to be done by taking services of expert agencies in this field. All of these shall be tested, rectified, and certified by the authorized agencies as per statutory requirements.
59. The Successful Bidder shall be responsible for collection, preparation, testing and analysis of samples of water, different types of oil, flue gas, hydrogen, oxygen, CO<sub>2</sub>, Station Coal etc. required for daily operation of plant as per schedules and procedures given in operating manual, MoEF / PCB guidelines and IS standards from UF RO DM plant, PTP, ETP, Boiler & Cooling Tower system, flue gas, Condensate Polishing Unit, STP, Bunkers, Mill site, Turbine & Generator, transformers etc. these tests shall be carried out at chemical laboratory established at ATPS. Tests & analysis which cannot be carried out at the plant laboratory shall be arranged by the Successful Bidder at reputed laboratories approved by the Owner, and the Owner shall reimburse such



- costs upon production of actual bills. All glass wares and consumables for lab equipment shall be arranged by the Successful Bidder at their own cost.
60. The Successful Bidder shall conduct and demonstrate full load capability every year for each unit along-with various plant performance evaluation tests and submit analysis reports to the Owner along with the action plan for any necessary corrective measures.
  61. The Successful Bidder shall review all directives containing or establishing compliance or other requirements in connection with the operation and maintenance of the power plant or applicable to the Successful Bidder in connection with its obligations. The Successful Bidder shall assist the Owner in securing and complying with all Clearances (including any renewals or replacements of the same) necessary for the operation and maintenance of the Plant including those relating to Boiler and Turbine operation, Water and Sewer use, and treatment and disposal of chemicals and other waste, including hazardous materials. All such Clearances shall be in the name of the Owner and at the cost of the Owner except for any Clearances required by the Successful Bidder to provide personnel to operate the Plant. The Successful Bidder shall continue to track the requirement of such clearances and shall duly inform the Owner of any new requirement coming into effect well in time. With respect to replacements and renewals of Clearances obtained by the Owner, to the extent that it has actual knowledge of the existence and the terms of the original Clearances, the Successful Bidder shall provide reasonable notice to the Owner in writing of the need to replace, renew or obtain such Clearances.
  62. The Successful Bidder will ensure timely deposition of all statutory levies / fees in the different government departments required for operation & maintenance of the units after taking the approval of the engineer in-charge. However, the same shall be reimbursed to the company on the submission of the proof. The Successful Bidder shall ensure timely receipt of all such statutory bindings from the engineer in-charge. The Successful Bidder shall also be responsible for liaison with different government departments for timely clearances.
  63. Operation, Maintenance, and upkeep of complete Fire System is in the scope of the Successful Bidder which includes Fire Extinguishers, Fire Hydrants, Fire Monitors, Fire Hose/Hose Box, Fire Buckets, Fire Alarm system, IR detectors, Transformer fire protection system, Generator CO2 flooding system, DV system. etc. with required OEM services and any other services needed for fire system.
  64. The Successful Bidder will undertake scheduled outages for the power plant during the Operating Period as per plan agreed during the contract finalization.
  65. The Successful Bidder shall obtain, on behalf of the owner, all necessary statutory approvals from Inspection Authorities, or other government authorities, as may be required, as per Applicable Laws at its own cost. 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 Successful Bidder.

### **Division of Responsibility**

S. No.	Description	Owner's Scope	Successful Bidder's Scope
1	Total comprehensive operations and	Provide necessary guidelines, performance targets, available Plant	Entire operations and maintenance of Plant (including material management, spare management, switchyard, and all other systems and utilities)



	maintenance of the Plant	details, drawings, manuals etc.	
2	Takeover of Plant operations	Provide necessary access to the Plant premises and assistance to Successful Bidder for smooth takeover.	Taking over of the Plant including tools & tackles, Spare Parts, materials, drawings, documents, manuals, reports, operation & maintenance records etc. from the Existing O&M Contractor or Owner during Takeover Phase.
3	Plant infrastructure (including workshops, labs, IT)	Provide access to all available infrastructure that are required for O&M of Plant.	Responsible to operate and maintain all Plant infrastructure for smooth O&M of power Plant and handover all Plant infrastructure back to the Owner after the tenure of the contract in given or better condition.
4	Spares and Consumables (procurement, inventory, and management)	Provide approval, necessary guidelines, hand-over available store inventory to the Successful Bidder and supervision	Procure and manage all engineering spares and other spares to ensure all performance targets are met. Responsible for planning, ordering, inventory management, testing, quality control, storage, refurbishment and raising proper invoices.  All consumables required for smooth O&M of the Plant including housekeeping sanitation. In case of damage or theft of the any of the spares, consumables, tool, and tackles, the same shall be procured and replaced by Successful Bidder.
5	Tools and tackles	Available tools and tackles in workshop will be given to the Successful Bidder for operations for the duration of contract.	To procure and maintain all tools and tackles necessary for smooth operations of Plant from the date of takeover; and to hand over the same to the owner after contract completion
6	Software for monitoring performance, diagnostics, optimization, and PM	NA	Successful Bidder should implement software for smooth operations, safety and maintenance after alignment with the Owner at its own cost.
7	Available OEM manuals, test reports etc.	Available OEM manuals and overhaul PG test reports and other test reports available will be handed over to the Successful Bidder.	To operate all equipment as per OEM instructions and other guidelines.
8	Performance monitoring, reporting of outages, target monitoring	Owner's representative to oversee the performance of the Successful Bidder, compliance to all regulations and laws. Owner will attend meetings and approve all reports to review and	Regularly carry out performance evaluation of Plant, maintain daily, monthly, and other reports as per Owner's guidelines. Provide recommendations and implement performance improvement techniques and solutions. Provide RCA and CAPA reports for all outages and breakdowns.



		monitor Plant performance.	
9	Coal/ Lignite	Supply of lignite from mines up to weighbridge	From unloading area in Plant onwards all under Successful Bidder's scope. Responsible for entire fuel management. Ensure proper accounting, minimize coal quality in Plant losses, and meet SLC targets. Maintain all MHP equipment, spares, and facilities at industry best standards.
10	Limestone, Secondary Fuel Oil and other fuels	Supply of limestone, secondary fuel oil and other fuels up to weighbridge	Assist in procurement, coordination, receipt, quality inspection /testing, storage, utilization, waste disposal till designated location, accounting & reporting.  From unloading area in Plant onwards all under Successful Bidder's scope. Responsible for entire fuel management. Ensure proper accounting, minimize coal quality in Plant losses, and meet SLC targets. Maintain all equipment, spares, and facilities at industry best standards.
11	Chemicals (like NaOH, HCl, NaOCl, etc)	NA	Procurement, Coordination, Receipt, Quality Inspection /Testing, Storage, Utilization, Waste Disposal till designated location, Accounting & Reporting
12	Oil and lubricants for Plant operations	NA	Procurement, Coordination, Receipt, Quality Inspection /Testing, Storage, Utilization, Waste Disposal of Oil & Lubricant till designated location, Accounting & Reporting
13	Chemical laboratory instruments, equipment, and chemicals	Provide existing site facility lab, chemical, equipment and testing standards.	Maintenance and upkeep of all the facility provided by Owner including scheduled testing and calibration against NABL standards. Facilitate additional site testing instruments and equipment's for site on time bound manner as and when required. Also, if required outside testing and calibration is in successful bidder's scope. All type of bulk Chemicals required for Boiler, CW System (successful bidder has to consult owner for selection of chemical w.r.t installed measuring instrument) etc. (ensuring no excess consumption due to mal operation/ defective workmanship) including chemicals/reagent required for lab testing purpose shall be borne by the Successful Bidder. In case of damage or theft of the any of the facility provided by Owner the same shall be procured and replaced by Successful Bidder with reputed Owner's approved make /model.

14	Electrical and Instrumentation Lab along with instruments and equipment	Provide existing site facility with Electrical and Instrumentation testing instruments and equipment's.	Maintenance and upkeep of all the facility provided by Owner including scheduled testing and calibration as per the NABL standard, through outside service provider. Facilitate additional site testing instruments and equipment's for site on time bound manner as and when required. In case of damage or theft of the any of the facility provided by Owner the same shall be procured and replaced by Successful Bidder with reputed Owner's approved make /model.
15	Mechanical workshop facility along with all hardware and software	Provide available common workshop facility and equipment to be used for smooth operations and maintenance of Plant	Maintain all equipment, logistics and facilities needed for smooth operations and maintenance of Plant. Any additional or external services needed to be managed by Successful Bidder.
16	Water	Provide details of current arrangement for water management and necessary guidelines.	Entire water management from intake from sea water channel to disposal of wastewater. Test water quality for all parameters and take necessary steps to ensure correct water quality.
17	Human Resources Management	Owner's supervisory team will be deputed at site to oversee Plant's performance. Owner to provide necessary guidelines	All manpower resources required for Plant operations and maintenance, material handling, housekeeping, external services, shutdown, overhauls and other activities as per contract. Indicative list of people and their qualifications are mentioned in Annexure 5.
18	Painting of plant and around the Plant	Provide necessary guidelines	Entire painting and upkeeping of all Plant equipment, systems, pipeline civil structures etc.
19	Housekeeping and sanitary maintenance	Provide available housekeeping and sanitation items, necessary guidelines	Housekeeping and sanitation of entire Plant area as per Owner's guidelines and standards. Complete Plant upkeep services with necessary facility/ equipment.
20	Security, surveillance, CCTV	Provide Security incharge, available equipment, facility, and necessary guidelines.	Responsible to maintain, monitor and upkeep the resources. Responsible for security of entire Plant as per Owner's guidelines including gatekeeping, store security, equipment security etc. All Successful Bidder personnel to be issued identity cards with photographs and necessary information such as blood group. Everyone must wear their ID card and adhere to all security protocols set by Owner's representative on site. Successful Bidder to annex security personnel list along with qualification

21	Safety (safety equipment, protocols, personnels, SOPs)	Provide necessary guidelines.	All items are in Successful Bidder's scope including system and guideline changes as per Owner guidelines and standards. Successful Bidder is responsible for enforcing security of the Plant area under its purview. Safety of all the personnel working for and on behalf of Successful Bidder is the responsibility of Successful Bidder. Enforcement and Control of safety at site will be with Successful Bidder.
22	Firefighting equipment and fire system	Provide necessary guidelines	Operation, Maintenance, and upkeep of complete Fire system is in the scope of Successful Bidder which includes Fire Extinguishers, Fire Hydrants, Fire Monitors, Fire Hose/Hose Box, Fire Buckets, Fire Alarm system, IR detectors, Transformer fire protection system, Generator CO2 flooding system, DV system. etc. with required OEM services and any other services needed for fire system.
23	Power Evacuation	Provide necessary guidelines	Responsible for complete operations of 220KV switch yard, transformers, capacitor banks, MRSS (Distribution system) including Grid Feeders, Double circuit Transmission lines This includes coordination, scheduling, operations, and power distribution.
24	Statutory clearances/ License/ Permits from state, central authorities	Provide information about available licenses, permits or any statutory clearances.	All the Statutory approval /Renewal of license of the Plant /systems are in the scope of Successful Bidder including fee/ providing all required data/ drawings/ documents/ reports for approvals as required with submission of forms, reports, analysis, etc to statutory authority.
25	Insurance of Plant and machinery	Obtaining and maintaining the Insurance for Plant and Machinery.	Responsible for necessary failure analysis, reports documentation and expert report etc. for the insurance claim.
26	Insurance for O&M manpower, equipment, and vehicles	Provide necessary guidelines	Responsible for all kinds of insurance for manpower, equipment, vehicles engaged for and on behalf of Successful Bidder as per Owner's guidelines.
27	Insurance of Plant personnel	Provide necessary guidelines	Maintain all necessary insurance for all personnel and monitor manhours of training, of Successful Bidder for the duration of the contract.
28	Training and development of O&M manpower	Nil	Responsible for necessary training as per guidelines (including first-aid, safety, technical, emergency handling, fire, performance, efficiency, upskill trainings) as per best industry practice
29	Startup power and backup power	Power Tie up with GUVNL for start-	Resuming power, distribution & coordination with all load centers and GUVNL grid sub-station (GSS) end, will



		up/back-up power, will be done by GMDC.	be in the Successful Bidder's scope. Maintenance of EDG sets diesel firefighting pumps including fuel for the same shall be in the scope of the Successful Bidders.
<b>30</b>	Sewage and wastewater discharge (from CT, boiler blow down, water treatment)	Provide necessary guidelines	Dispose the Plant sewage and wastewater (from all sources) in mutually agreed location. Coordinate with Plant and arrange for required logistics. Handle and dispose of wastewater as per guidelines decided.
<b>31</b>	Fly Ash/ Bottom Ash Disposal	Provide necessary guidelines	Entire scope including Inspection, loading & dispatch of ash disposal vehicles (dumpers, trucks), disposal within plant and outside plant including ash transportation, sale of ash as per guidelines. Transfer and recycling of wet fly ash as per guidelines. Shifting bottom ash from conveyor to yard. Bottom ash yard management with regular reporting. Equipment management for this purpose.
<b>32</b>	Effluents and pollutants	Provide necessary guidelines	Maintain effluents and pollutants levels as per statutory norms.
<b>33</b>	Solid Waste disposal	Provide necessary guidelines	Responsible for solid waste management and disposal as per guidelines.
<b>34</b>	Used oil/ lubricant disposal	Provide necessary guidelines	Segregation, shifting, storage, disposal of waste oil/ lubricants as per guidelines
<b>35</b>	Annual shutdown / Major overhauling of BTG, ESP	Provide timelines and necessary guidelines	Annual shutdown maintenances and overhauls as per Owner's guidelines and any other maintenance as specified by Owner or OEM.
<b>36</b>	External services/ Existing contracts	Provide necessary guidelines and details of all existing contracts necessary for O&M of the Plant.	Successful Bidder must comply to Owner's existing/ external contracts as per necessary terms and conditions after mutual discussion.
<b>37</b>	Store/ substore Management / Material Management inside Plant premises	Provide existing Stores facility and necessary guidelines /procedures	Full Store/ substore at power Plant /central store premises must be maintained by Successful Bidder and provide necessary support for perpetual inventory management and for quarterly Physical verification. The entire store management will be with Successful Bidder.
<b>38</b>	Dredging and Forebay Cleaning	Provide guidelines	Complete operation and maintenance of the Sea Water System from the intake point (i.e. open cut channel and RCC channel up to traveling screen) (including maintaining the forebay) shall be in the Successful Bidder's scope.
<b>39</b>	Maintenance of civil structures & buildings, service buildings, admin buildings store etc.	Provide guidelines	Responsible of maintenance and upkeep of entire civil structures including not limited to service buildings, admin buildings, Plant working areas, stores etc.



<b>40</b>	Modification/ upgradation in systems/ Plant/ equipment	Provide necessary guidelines.	Implement/ carry out all necessary modifications, upgradations as per Owner's guidelines.
<b>41</b>	Major modification/ capex installation	Identify capex requirements along with the Successful Bidder  Provide necessary guidelines, capex installation and reimburse any major equipment/ materials.	Identify capex requirements along with the Owner, providing proper reasoning for modification / installation.  Implement/ carry out all necessary modifications, upgradations as per Owner's guidelines, post Owner's approval
<b>42</b>	Power sale to GUVNL	Power sale invoicing and interface with GUVNL	Provide inputs to Owner for raising power sale invoices
<b>43</b>	Preventive maintenance	Provide initial indicative list along with necessary guidelines	Responsible of all PM, monitoring and performance improvement. The Successful Bidder, in the first 2 months should review the PM schedule and make necessary optimizations and improvements after approval from Owner's representative.
<b>44</b>	Transportation of Successful bidder Manpower	NA	In scope of successful bidder

#### **4. Responsibilities of the Successful Bidder**

Successful Bidder's obligations are as follows (to be read along with the scope of work as defined in Section 3 of Part 2 of the RFP):

- a) Within 15 (fifteen) days of the receipt of award of Contract, the Successful Bidder shall, by written notice, designate a person to be known as O&M (Operation & Maintenance) Head who shall act as Successful Bidder's representative, be empowered to make decisions on behalf of Successful Bidder which are related to the implementation of this Contract. Successful Bidder may change his representative with the consent of the Owner upon delivery of written notice to Owner. The Successful Bidder shall also change his representative after a written intimation by the Owner to do so.
- b) The Successful Bidder shall carry out all day-to-day Operation & Maintenance of the Plant including Scheduled Maintenance and Breakdown Maintenance Work. The Successful Bidder shall prepare / updates SOPs (Standard operating Procedure) / SMPs (Standard Maintenance Procedure) and Maintenance Schedules to a standard which will give the essential guidance to ensure that the Plant is operated and maintained as per the manufacturer's instructions & prudent utility practices and helps the Plant in optimizing its technical and commercial performance; such SOPs & SMPs will be put in place after approval of the Owner. The Successful Bidder shall also carry out Work related to unexpected findings and unscheduled maintenance work. The Scheduled Maintenance work shall correspond with the projected Scheduled Outage Plan.
- c) The Successful Bidder shall submit to the Owner after each major tripping of STG/ 220 kV Switchyard/ Power Plant, Trip Analysis Report with a Root Cause Analysis and suggest recommendations for improvement / mitigating future unforeseen Forced Outage risks for evaluation and documentation.



- d) Upon occurrence of an unscheduled outage, the Successful Bidder shall investigate the cause and send a preliminary report, then carry out the required work.
- e) The Successful Bidder shall submit to the Owner after each Scheduled and Unscheduled Maintenance Outage of covered equipment, reports for evaluation and documentation.
- f) The Successful Bidder shall depute sufficient staff at the Plant including engineers/ resident engineers, technicians, and workers.
- g) The Successful Bidder shall provide technical support, assistance and evaluation for the technical issues related to the Plant on a real time basis, without undue delay.
- h) The Successful Bidder shall always provide to the Owner unhindered access to their controlled work area during the Term of the Contract except in such situations when the Successful Bidder deems that the personal and equipment safety is at risk.
- i) The Successful Bidder shall return all the tools and equipment borrowed from Owner after use in good and working condition at the end of agreement period.
- j) The Successful Bidder shall return all handed over spares, consumables, equipment, and systems at the end of the Contract Period.
- k) The Successful Bidder shall demonstrate the plant capability as per agreed schedule or as and when required.
- l) The Successful Bidder shall prepare and submit daily, monthly, quarterly, half-yearly and yearly Operation & Plant performance reports, comprising of important parameters reports, such as Generation, PLF, AUX power consumption, specific & daily fuel consumption (Coal/ HFO/ LDO), DM water consumption etc. These reports should have comments/ reasons of deviation in operating parameters/ low generation etc. The Successful Bidder shall maintain current revisions of the specifications, lists, clarifications, and other materials provided to the Successful Bidder by the Owner
- m) All such logs, records and reports shall be retained by the Successful Bidder for the periods and records so maintained shall be handed over to the Owner at the end of the Term. Copies of all such reports that may be submitted to any Competent Authority by the Successful Bidder shall be transmitted to the Owner for the Owner's approval (which approval shall not be unreasonably withheld) prior to the submission of the same to any Competent Authority. As far as reasonably practical, the Successful Bidder shall provide such reports to the Owner not less than Ten (10) Business Days before they are due.
- n) The Successful Bidder shall ensure regular and pertinent training to the technical staff of the plant on technical (3 days) and safety (1 day) aspects (minimal 4-mandays per employee per year as per industry practice). All the executives and supervisor and technical staff of the Successful Bidder should possess relevant competency / statutory and experience certifications. The above requirement will be regarded as very essential in view of safe and effective working of the Plant and no compromise will be regarded in this aspect.
- o) The Successful Bidder shall propose and submit to the Owner, the Annual Operating Plan for the first Year of the Contract as well as short term plans within 30 days from the effective date. Within 30 days after the end of each Operating Year, the Successful Bidder shall submit to the Owner an Annual Operations Report in form and substance reasonably satisfactory to the Owner. By the 10th (tenth) business day after the end of each month during each Operating Year, the Successful Bidder shall submit to the Owner a Monthly Operations Performance Report (MOPR format as approved by plant manager) in form and substance reasonably satisfactory to the Owner.
- p) The Owner will arrange for the accommodation and food and beverage requirements of the Successful Bidder at the plant for the key personnel of the Successful Bidder deployed on ground to oversee the execution of work, on chargeable basis and on the basis of



availability of accommodation. The Successful Bidder shall ensure that the personnel are available at the plant for the entire duration of term of contract and shall take requisite consent from the Owner with prior intimation through a Written Notice in case of any changes in availability of Personnel.

The responsibilities of the Successful Bidder as part of the Contract have been detailed for each category below.

Transition or Takeover Phase: The Successful Bidder shall provide all the services required during the Takeover Phase including but not limited to:

- a) Operating and maintaining the Plant along with the Existing O&M Contractor during Takeover Phase, including mobilization of staff and resources
- b) Taking over of the Plant including tools & tackles, spares, materials, drawings, documents, manuals, reports, operation & maintenance records etc. from the Existing O&M Contractor or Owner during Takeover Phase.

Operations Phase for duration of the contract: The Successful Bidder shall be responsible for entire operations and maintenance of the Plant including but not limited to scope of work mentioned in section 3 Part 2 of this document. The Successful Bidder shall be responsible for generating electricity from the Plant as per Owner's guidelines and supply and management of spares, raw material, consumables, tools, tackles etc. for smooth operations of the Plant.

General guidelines for operations:

- 1) Entry to the Plant area is restricted only to authorized personnel who fulfill the entry procedure.
- 2) All personnel entering Plant areas should be physically fit and free from the effect of intoxication and narcotics.
- 3) Vehicles must possess the valid entry pass/ sticker provided by Security department after showing required documents.
- 4) Horse play and fouling is strictly forbidden.

### **General Terms and conditions for performance**

#### **A. Standards for performance of obligations**

The Successful Bidder represents and warrants that it has the requisite skills, experience, expertise, and capacity to fulfill its obligations and responsibilities under the Contract. The Successful Bidder 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.



The Successful Bidder 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.

**B. Standards for Sub-contracting**

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

1. Obtaining 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.

**C. Environmental compliance**

Owner acknowledges that operations and maintenance involves the generation of Waste and Regulated Waste. The Successful Bidder shall have responsibility or liability with regards to Waste and Regulated Waste during the term of the Contract in compliance with Indian Environmental laws and Regulations including Gujarat Pollution Control Board Regulations as applicable. Successful Bidder should comply with all environmental and emission norms. (Indicative list is mentioned in Annexure 6). Successful Bidder shall be capable of handling hazardous material as recommended by OEM. At the end of the contract, the Successful Bidder shall certify by written notice to the Owner that the work area is free of any hazardous material/ toxic material brought by the Successful Bidder.

**D. Warranty for services and supply of goods**

Successful Bidder warrants that the O&M services performed, and goods supplied by or on account of the Successful Bidder shall be free from defects. The Successful Bidder warrants for each item or services provided hereunder that:

- (1) The services of its personnel shall be competent and consistent with prudent industry practices and,
- (2) The technical information, reports, analyses, and recommendations transmitted by the Successful Bidder in connection therewith shall be competent and consistent with prudent industry practices.

**5. Responsibilities and rights of the Owner**

**5.1 Responsibilities of the Owner**

The Owner shall be responsible for the following key activities during the term of the contract:

**5.1.1. Access to Plant infrastructure**

The Owner shall provide, without undue delay, to the Successful Bidder unhindered access to Site always during the term of contract except in cases when Owner feels equipment and personnel safety is at risk.



The Owner shall allow the Successful Bidder use of available site facilities (including spare parts, workshop, labs, tools, and tackles) required for operations and maintenance service for the power plant during the term of the contract.

#### **5.1.2. Access to documents and data**

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

#### **5.1.3. Other responsibilities**

The Owner will be responsible to supply fuel (Lignite) and Lime to the Successful Bidder. The Owner shall be responsible for entering into contracts/ arrangement/ agreement for furnishing and delivering the lignite and lime up to lignite / lime unloading area. After this terminating point, other works such as unloading the trucks/wagons etc., as described elsewhere in this document shall be in the scope of Bidder.

The Owner shall assist the Successful Bidder in obtaining approvals, permits and licenses where Owner's help is required.

The Owner shall maintain the insurance coverage for entire Plant as per their current Insurance.

### **5.2 Rights of the Owner**

The Owner, throughout the tenure of the Contract, reserves the following rights, not specifically granted to the Successful Bidder.

#### **5.2.1. General policies and procedures**

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

#### **5.2.2. 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 the Successful Bidder, with its authorized representatives.

#### **5.2.3. Access to data**

The Owner reserves the rights to access all records, documents, and data relating to the services provided by the Successful Bidder during the term of contract, including for making copies thereof or extracts.

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

### **6. Reporting requirements and deliverables**

The Successful Bidder shall prepare and submit a comprehensive 'Operations Plan' and a comprehensive 'Maintenance plan' along with a 'Consumables Procurement Plan' and 'Spares Procurement Plan' for the coming year incorporating the key activities to be



undertaken, inputs/ recommendations from last year's performance report, plant personnel, and using standard inventory guidelines, within 60 days of award of LOA and before 7th January each year.

Reporting Guidelines:

1. Prepare and submit daily, monthly, quarterly, and yearly operations and Plant performance reports. The reports shall consist of but not limited to the following:
  - a. PAF, APC, SHR (with details around calculation as per contract)
  - b. Specific and total fuel, water, chemicals consumption
  - c. Fuel, DM water and raw material characteristics
  - d. Reasons for deviations, low values etc.
  - e. PM compliance and maintenance activities undertaken.
2. Prepare and submit daily, monthly, quarterly, and yearly equipment outage report across all major equipment and other analysis report within reasonable time consisting of root causes and CAPA.
3. Prepare and submit reports of each major tripping of units, trip analysis report with a root cause analysis and suggest and implement recommendations for improvement and mitigation of future forced outages risk. These reports may also contain detail descriptions of any root cause found, or deviations found.
4. Submit quality assurance reports for all spares procured.
5. Maintain logs, records, and all reports for their entire tenure of contract.
6. Submit copies of all reports, records, logs, and analysis data to Owner's representative.
7. Maintain environmental, safety, security, waste disposal reports as per statutory requirement and applicable laws.
8. Report any safety statistics required under Applicable Laws, including details of any hazardous incidents and activities relating to environmental aspects and public relations to the Owner and relevant government statutory body.

Meeting timelines:

1. Daily Planning Meeting (DPM)

*Frequency:* Once daily in the morning.

*Attendees:* To be attended by concerned key personnel from Successful Bidder and Owner at site.

*Agenda:* Power generation plan for the day, discuss and evaluate the previous day DGR (Daily Generation Report) and any other agenda from the Owner

2. Monthly Review Meeting (MRM)

*Frequency:* Once every month preferably 1<sup>st</sup> week of every month.

*Attendees:* To be attended by concerned key personnel from Successful Bidder and Owner at site. Necessary experts or people from Owner head office.

*Agenda:* Operations and Maintenance Planning for the month. Discuss and evaluate the previous month report (to check for compliance to all KPI's and parameters, check



for major deviations, root cause analysis alignment for all major outages, inventory planning and alignment, invoice dispute settlement for the previous month). Spares procurement plan alignment and verification of all proforma invoices submitted for spares purchase.

### 3. Bi-Annual Review Meeting (Bi-ARM)

*Frequency:* Twice every year, preferably at the end of second and fourth quarter.

*Attendees:* To be attended by concerned key personnel from Successful Bidder and Owner at site. Necessary experts or people from Owner head office.

*Agenda:* Review of Successful Bidder performance, discuss and evaluate the performance report till date (to check for compliance to all KPI's and parameters, check for major deviations, root cause analysis alignment for all major outages, inventory planning and alignment, major planning changes due to external factors). Plan for and update PM schedule and any major overhaul that is needed.

Other than these, meetings can be called by the Owner, with proper prior intimation to the Successful Bidder. The frequency of these meetings will be as per requirement and the attendee and agenda for these meetings will be decided by the Owner.

## 7. Contract performance measurement

### 7.1 Key Performance Indicators (KPIs)

The Successful Bidder shall adhere to the following KPIs and targets. In case of shortfall, liquidated damages shall be applicable and in case of superior performance, incentives shall be applicable as per the following sections:

KPI	Threshold (for each Unit)	Liquidated damages	Incentives
Plant Availability Factor (PAF) <sup>1</sup>	< 77%	1% of annual O&M service fees for every 1% decrease in PAF	NA
	77% – 80%	NA	NA
	80% - 88%	NA	0.4% of annual O&M service fees for every 1% increase above 80% in PAF
Station Heat Rate (SHR) <sup>*1</sup>	> 2700 Kcal/ KWh	0.08% of annual O&M service fees for every 1 Kcal/ KWh increase in SHR	NA
	2670 – 2700 Kcal/ KWh	NA	NA
	< 2670 Kcal/ KWh	NA	0.04% of annual O&M service fees for every 1 Kcal/ KWh decrease in SHR

KPI	Threshold (for each Unit)	Liquidated damages	Incentives
Auxiliary Power Consumption (APC)* <sup>1</sup>	> 11.0%	0.1% of annual O&M service fees for every 0.1% increase in APC	NA
	10.8% – 11.0%	NA	NA
	< 10.8%	NA	0.05% of annual O&M service fees for every 0.1% decrease in APC
Secondary Fuel Oil Consumption (SFOC)	3.0 ml/ kWh	50% of cost of extra fuel used	
In-Plant Lignite Quality Losses	>= 3%	1% of annual O&M service fees for every 1% increase in in-Plant lignite quality losses	NA
	< 3%	NA	NA
In-Plant Lignite Quantity Losses	>=0.2%	0.1% of monthly O&M service fees for every 0.1% increase in in-Plant lignite quantity losses	NA
	<0.2%	NA	NA
Spares Inventory Management	95%	0.08% of monthly O&M fees for every 1% decrease in spares inventory management as defined in Annexure 4	NA
Preventive Maintenance (PM) compliance	95%	0.08% of monthly O&M fees for every 1% decrease in PM compliance	NA
Personnel Deployment	Detailed in annexure 4 and 5	Detailed in annexure 4 and 5	NA
DSM charges (Deviation Settlement Mechanism Charges)		100% of DSM penalties will be adjusted against the monthly payments to the Successful Bidder subject to the annual cap of 10% of the charges of operations and maintenance package for the relevant operating year.	In case of incentives, the amount received shall be shared 75:25 between the Owner and the Successful Bidder, subject to the annual cap of 10% of the charges of operations and maintenance package for the relevant operating year.

KPI	Threshold (for each Unit)	Liquidated damages	Incentives
Emissions	As per prevailing environmental laws.	<b>Penalty</b> of INR 50,000 per show-cause notice issued to the Owner for non-compliance and for reasons attributable to the Successful Bidder	
Safety	No lost time due to injury (Lost Time Incident (LTI) and Guaranteed Safety Level)	For every accident at the Plant resulting in the death of any O&M Plant Staff, the Successful Bidder shall pay to the Owner as Liquidated Damages: <b>a.</b> The overall actual charges applicable in case of death of any O&M Plant Staff. <b>b.</b> Other reportable injury to any Plant O&M Staff, Rs 50,000 (Rupees Fifty Thousand)	

\*The final threshold values for KPIs of SHR and APC will be determined post complete PG test of plant after stabilization of plant (after three month of normal operation of plant after turnaround) through third party and selection of third party should be done by the Owner prior of specified three months. Cost of the third party will be 50% of the Owner and 50% of the successful bidder. Details for calculating the KPIs, their definitions/ formulas are defined in Annexure 4.

<sup>1</sup>For PAF, SHR and APC,

- The Successful Bidder will make an annual plan for running the plant, including but not limited to, monthly target values for PAF, SHR and APC which will be approved by GMDC.
- This plan will be reviewed every quarter in quarterly meetings against actual achieved numbers, particularly for PAF, SHR and APC.
- In case the actual values of PAF, SHR and APC are worse than the threshold for a quarter (e.g., PAF <77%, SHR >2700 kcal / kWh, APC >11%), a warning notice will be issued to the O&M Contractor for recovery within the next quarter.
- In case the actual values are not recovered at the base threshold value (base threshold values - PAF > = 77%, SHR, < = 2700 kcal / kWh, APC < = 11%) even in the next quarter as mentioned in the point above, the performance security will be seized.
- In case any of the values of PAF, SHR and APC are <= 70%, >=2800 kcal / kWh and >=13% respectively cumulatively for a year, GMDC will have the right to terminate the contract immediately (the Successful Bidder will have to pay LDs as well for the year as per the table above).
- The values will be carried forward in the next year in case values of PAF, SHR and APC lie between 70 – 77%, 2700 – 2800 kcal / kWh and 11 – 13% respectively. If any of the cumulative values in two years of PAF, SHR and APC are <= 74%, >=2750 kcal / kWh and >=12% respectively, GMDC will have the right to terminate the contract



immediately (the Successful Bidder will have to pay LDs as well, as applicable, as per the table above).

- After three years, in case all the three values of PAF, SHR and APC are  $\geq 77\%$ ,  $\leq 2700$  kcal / kWh and  $\leq 11\%$  respectively, the O&M contractor will be eligible for extension of additional 2 years.

## 7.2 Overall ceiling on Liquidated Damages and incentives

1. All liabilities due from the Successful Bidder arising out of the shortfall of performance levels mentioned under Section 7, as per the liquidated damages defined in Section 7.1, shall be restricted to a maximum of 20% of the Lumpsum Charges for Operations and Maintenance Package as defined in Section 8.1 of Part 2 of this document.
2. All incentives due to the Successful Bidder arising out of the enhanced performance levels mentioned under Section 7, as per the incentives defined in Section 7.1, shall be restricted to a maximum of 15% of the Lumpsum Price for Operations and Maintenance Package as defined in Section 8.1 of Part 2 of this document.

## 8. Payment terms

### 8.1 Lumpsum Charges for Operations and Maintenance Package

The Successful Bidder shall quote the Lumpsum Charges for Operations and Maintenance Package of the Plant for the 1st (first) year and the annual escalation rate applicable for the remaining two years separately as per Annexure 16. The methodology for calculating the lumpsum charges for the 3 (three) years is detailed in Annexure 16. Payment will be done on monthly pro rata basis after accounting for applicable LDs and incentives for the month.

The Successful Bidder would be paid an advance and mobilization fee, after receipt of Bank guarantee as per section 2.5 of part 3 of the RFP.

### 8.2 Payment milestones

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

T – date of commencement of work

#### Operating Year - 1

Activity	% of contract value for 1 <sup>st</sup> year	Timelines
Advance and mobilization	10%	T - 2 months
O&M fee for operating year - 1	90% (7.5% per month)	T + 12 months (Monthly payments in equal installments for 12 months)

### Operating Year – 2

Activity	% of contract value for 2 <sup>nd</sup> year	Timelines
O&M fee for operating year - 2	100% (8.33% per month)	T + 24 months (Monthly payments in equal installments for 12 months)

### Operating Year – 3

Activity	% of contract value for 3 <sup>rd</sup> year	Timelines
O&M fee for operating year - 3	100% (8.33% per month)	T + 36 months (Monthly payments in equal installments for 12 months)

1. The Successful Bidder needs to deploy key personnel during the final 15 days of the overhaul of ATPS plant basis mutual discussion and agreement between the Successful Bidder and the Owner post award of contract.

## 8.3 Terms and Conditions

- 1) The Successful Bidder shall submit invoices for verification, audit, and approval at the end of each month (i.e., 1st week of next month) for the duration of the contract stated.
- 2) Authority shall make payment within 30 days of submission of invoices upon verifying the liquidated damages and incentives for the period for which invoice is submitted, as per Contract conditions.
- 3) An ad-hoc payment @ 80% of the payable amount arrived after considering above deduction, will be paid by office of the G.M. [Power Project], within 30 days of submission of the invoice along with its details.
- 4) The invoice shall then be sent to GMDC's Corporate Office at Ahmedabad for verification, auditing and approval. Balance 20% payable amount of Running account invoices shall become payable by Project within two weeks of the receipt of the approved invoice from Corporate Office
- 5) Owner shall be entitled to withhold payment if any of the invoices do not include the supporting documents required by the Owner (if any) and shall only be released after getting proper supporting documents, including statutory payments, from the Successful Bidder. No interest shall be paid by the Owner on any delayed/ disputed payments.
- 6) The Owner shall have the right to:
  - i) Audit and request further verification of any invoice for the period of the contract or more if required by law.
  - ii) Receive from the Successful Bidder any information or documentation needed to present to government agencies or authorities.
- 7) The invoices submitted will be processed considering following deductions:
  - i) Applicable GST, over and above approved Lumpsum Charges for Operations and Maintenance Package of the plant, 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 the Successful Bidder.

- ii) 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.
- iii) Prorated liquidated damages.
- iv) Cost of any services provide/ material supplied plus 15% administrative charges (if any) by GMDC.
- v) Other deductions (if any)

## 9. Insurance

During the term of the contract, the Successful Bidder shall maintain:

- 1) General comprehensive third-party liability insurance, including bodily injury, property damage, products/ completed operations, standard contractual, environmental impairment/ pollution, and personal injury liability.
- 2) The Successful Bidder shall arrange workmen compensation insurance in accordance with any applicable law and good industrial practices for their employees including employees of sub-contractors except those on deputation from Owner.
- 3) Automobile liability insurance in accordance with applicable law.

The Successful Bidder shall take full responsibility to take all precautions to prevent loss or damage to the works or part thereof for any reasons whatsoever (except for reasons which are beyond control of the Successful Bidder or act of God, e.g. flood, riots, war, earthquake, etc.) and shall at his own cost, repair and make good the loss/damage to the work so that on completion, the work shall be in good order and condition and in conformity with the requirements of the contract and instructions of the project authority, if any.

The Successful Bidder shall, at all times during the pendency of the contract, indemnify the GMDC against all claims, damages, or compensation under the provisions of the Employee's Compensation Act and shall take insurance policy covering all risk, claims, damages, or compensation payable under the Employee's Compensation Act or under any other law relating thereto.

The Successful Bidder 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 the Successful Bidder or its Sub-Contractor for the purpose of the performance of the Work. Any insurance claim brought against the GMDC by an individual or by customers or by any such other persons who suffered damage due to negligence of the Successful Bidder or his employees, the same shall be settled by the Successful Bidder at his cost.

The Successful Bidder 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 the Successful Bidder or its Sub-Contractor for the purpose of the performance of the Work.

The Successful Bidder shall ensure that the insurance policy/policies are kept alive till full expiry of the contract by timely payment of premiums and shall not be cancelled without the approval of GMDC. The cost of premiums shall be borne by the Successful Bidder, and it shall be deemed to have been included in the tendered rate.

The Successful Bidder 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.

## 9.1 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, the Successful Bidder shall provide evidence of insurance covers, or a certificate of all insurances maintained.

## 9.2 Remedy on Failure to Insure

If the Successful Bidder 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 the Successful Bidder under the Contract or otherwise from the Owner.

## 9.3 Limitation of Liability

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

- i) 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
- ii) The aggregate liability of the Successful Bidder 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 the Successful Bidder to indemnify the Owner with respect to patent infringement.

## 9.4 Claims for losses/damages.

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

## 10. Non fulfilment of terms and conditions and Termination of Contract

1. If at any time during the currency of this contract, if any breach occurs due to the reasons attributed to the Successful Bidder, 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 the Successful Bidder.



2. If the Successful Bidder 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 the Successful Bidder as per Section 7.3 of Part 3 of this document. This, however, shall not absolve the Successful Bidder 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 the Successful Bidder and the Successful Bidder shall be responsible to pay such cost incurred by the Owner to complete the work and / or to get the work completed.
3. Likewise, if the Successful Bidder 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 the Successful Bidder as per Section 7.3 of Part 3 of this document, and the Owner shall have a right to complete the work and / or to get the work completed at the risk and cost of the Successful Bidder
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 the Successful Bidder and without incurring any responsibility.
5. After termination by Owner for any reason, both parties shall mutually determine the work done and the Owner shall pay the Successful Bidder for any work done stated in the contract and for which invoice is submitted.

## 11. Contract terms and conditions

### 11.1 Statutory Guidelines

1. That the Successful Bidder shall obtain license under the Factories Act 1948 and subsequent amendment thereto, and it shall pay wages and benefits in accordance with the applicable laws and shall not pay less than as notified by the Government Authorities from time to time and shall maintain the employment records as required under applicable laws.
2. That the Successful Bidder shall get his own License under Contract Labor (Regulation and Abolition) Act. It shall be binding to get the same renewed from time to time and shall maintain all the records as per the act.
3. That the Successful Bidder shall be responsible to enroll his employees, deduct, add, and deposit in the relevant accounts the contributions as required under the Employees State Insurance Act, 1952 and the Employees Provident Funds and Miscellaneous Provisions Act 1952 and any other enactment's covered under the various applicable labor laws as well as maintain all books of records for the staff and employees deputed by it for this contract such as required under any laws applicable. The Successful Bidder shall also furnish a copy of such statements as documentary proof to the Owner.
4. That if the Successful Bidder is not covered under the Employees State Insurance Act, 1952 then it shall be the duty of the Successful Bidder to take appropriate insurance cover under the Workmen Compensation Act and take Group Personal Accident Policy for all the employees deputed at the project site.
5. The Successful Bidder has to issue to the employee's Identity card with their photos and shall also maintain relevant register.



6. The Successful Bidder must ensure that all workforce employees are over 18 years of age, and local participation shall be as per state guidelines.
7. That the Successful Bidder shall give leave/holiday to its workforce as per the provisions of labor laws applicable
8. Every person deployed by the Successful Bidder in a Plant must wear safety gadgets to be provided by the Successful Bidder and in accordance with Annexure 6.
9. Any statutory clearance, permission required for the work, its completion, commissioning shall be in the Successful Bidder's scope.
10. The Successful Bidder will be required to obtain License from the office of the Labor Commissioner for the required strength of labor before commencement of work at site and the same shall be maintained updated and valid throughout the currency of the contract.
11. If any amount becomes payable by the Owner as a result of any claim or application in terms of the provisions or non-compliance of provision of the any Acts, and the Rules and Regulations, By-laws or the Orders made there under, applicable from time to time, such amounts shall be recoverable from the Successful Bidder for which the Owner will not be responsible for any compensation.
12. That the Successful Bidder would obey with all applicable laws and maintain all such necessary records as necessitated under such enactments.
13. The Successful Bidder shall also indemnify the Owner against any claims, compensations, damages, loss, liquidated damages etc. for breach and / or non-fulfillment of the prevailing Rules and Regulations and other statutory provisions in force from time to time and applicable to the work during the currency of contract.
14. The Successful Bidder shall abide by the provision of the Motor Vehicle Act for machinery. Any consequences arising out of non-compliance of said Provisions will be at the Successful Bidder sole risk and cost, for which Owner will not be responsible for any compensation.
15. All the activities arising under the scope of the works shall be complied with various statute/laws/rules/regulations etc. Including environmental laws and if the Successful Bidder fails to comply the laws; it will be done at the risk and cost of the Successful Bidder and expenses will be recovered from the Successful Bidder.
16. The Successful Bidder shall comply with other statutory provisions of Law. The Successful Bidder shall comply with all applicable laws, ordinances, approved standards, rules, and regulations, and shall procure all necessary municipal and governmental permits, licenses and inspection and shall pay all fees and charges in connection with the items covered by the contract. The Successful Bidder shall serve the Owner harmless as a result of any in factions thereof. Successful Bidder will be solely liable for all non-compliances. The following are some of the major Government of India Acts and Regulations to be complied with by the Successful Bidder. The List is illustrative and not exhaustive.
  - a. The Factories Act of 1948 (63 to 1948) and Amendments and Rules (Amended up to date)
  - b. The Electricity Act, 2003 and rules made there under
  - c. The Indian Boiler Regulation Act, 1950 and rules made there under
  - d. The Minimum Wages Act, 1948 as amended from time to time
  - e. The Employees Compensation Act 1923 as amended from time to time



- f. The Payment of Wages Act 1936 as amended from time to time
- g. Payment of Bonus Act 1965 and amended up to date
- h. Contract Labor Regulations & Abolition Act 1970
- i. Interstate Migrant Workmen (Regulations) Act 1979

## 11.2 Bankruptcy

1. If the Successful Bidder commits an act of Bankruptcy or goes into liquidation except for construction purposes, or if its business is carried on by a receiver,
2. such receiver, liquidator or any person in whom the contract may become vested shall forthwith give 3-month notice thereof in writing to the Owner and in reasonable time (minimum 3 months) during which he shall take all reasonable steps to prevent stoppage of performance of the contract, have the option of carrying out the contract subject to his or their providing such guarantees as may be required by the Owner but not exceeding the value of the work for the time being remaining unexecuted.
3. In the event of stoppage of performance under the contract, the period of option under this clause shall be decided by the Owner considering the situation, provided that the above option is not exercised, the Owner may terminate the contract by serving notice in writing to the Successful Bidder. The power and provision so reserved to the Owner on taking of the work out of the Successful Bidder's hands shall apply as far as they may be when the contract is so terminated.

## 11.3 Notice

Written notice shall be deemed to have been duly served if delivered to the individual or to Successful Bidder or to the Signing Authority of the Owner from whom it is intended, or if delivered at or sent by mail or post, to the last business address known to him who gives the notice.

## 11.4 Canvassing not Permitted

1. Successful Bidder should not canvass their offer personally or otherwise by approaching the Chairman or the Member of the Owner. If any Successful Bidder wants to make any representation regarding his offer, he should write to the General Manager (Power), if he desires, but personal and oral representations are not permitted.
2. In spite of the above clear instructions, any Successful Bidder is found to canvass his offer or against his competitor's offer through personal approach to the competent authority or the officials of the Owner, their offer will be rejected without assigning any reason and the firm even is blacklisted.

## 11.5 Indemnification

The Successful Bidder shall fully indemnify, save harmless and defend Owner, Owner's shareholders, the Owner, and the directors, agents and employees of the Owner (the "Owner Indemnified Parties") from and against any and all claims, including reasonable legal costs, (collectively the "Damages") by third parties in respect of death or bodily injury or in respect of loss or damage to any property (other than the plant or part thereof) of not yet



taken over) which arises out of or in consequence of the services whilst the Successful Bidder has responsibility for the care of the works to the extent resulting from Successful Bidder's or their agents or employees intentional act, negligence, or strict liability or omission in the performance of the services hereunder; provided that the foregoing obligation shall not apply to the extent the Owner Indemnified Parties are contributory negligent or strictly liable or to the extent such damages are caused by the intentional acts or omissions of the Owner Indemnified Parties. The Successful Bidder shall provide Undertaking of Indemnity, in the form of Annexure 15 of this document.

### **11.6 Arbitration**

All questions, disputes, differences whatsoever which may at any time arises between the parties to this RFP and subsequent contract in connection with the RFP and subsequent contract or any matter arising out of or in relation thereto, shall be referred to Sole Arbitrator as per the provisions of Arbitration and Conciliation Act, 1996 and subsequent amendment thereto and the venue of arbitration proceedings shall be at Ahmedabad only. The Language of the Arbitration shall be in English only.

### **11.7 Governing Law**

This RFP and subsequent Contract shall be construed and interpreted in accordance with and governed by the laws of India.

### **11.8 Jurisdiction**

The matter related to any dispute or difference arising out of this RFP and subsequent contract shall be subject to the exclusive jurisdiction of Court at Ahmedabad only.

### **11.9 Completion of Work**

1. Upon the Successful Bidder fulfilling the entirety of its obligations under the Contract to the satisfaction of the Owner and subject to terms and conditions of the Contract, it shall become eligible to apply for a Completion Certificate. The General Manager of the Owner shall formally issue the Completion Certificate, after verifying the completion documents and satisfying himself that the Works under the Contract have been completed in accordance with all the provisions of this Contract.
2. Upon completion of Works under the Contract and before the application for the Completion Certificate, the Successful Bidder shall clear the site of the Owner of all rubbish, dirt, structures, scrap, oily rags etc. Failure to clear the project site may constrain the Owner to clear the said site at the risk and cost of the Successful Bidder
3. The Successful Bidder shall provide the Owner with all documents/records/proofs that may be demanded before issuance of Completion Certificate

### **11.10 Accident and Responsibilities of Successful Bidder**

1. The entire responsibility on account of any accidents, damage or personal injury which may occurred to any of the Successful Bidder's vehicles/ equipment or his/its employees, or any outside party shall be exclusively that of the Successful Bidder



and no claim whatsoever shall be entertained by the Owner on this account. The Successful Bidder shall keep the Owner indemnified from all the consequences.

2. In the event of any breakdown or accident during the course of any operation, the Successful Bidder shall notify the facts to the Owner's Authority person on site, or any other officer immediately present there of such incidence and shall simultaneously make adequate remedial arrangements on his/its own cost and risk and as per the instruction of the Owner's Authority person on site.
3. The Successful Bidder shall pay all claims, damages and compensation with cost arising out of or resulting therefrom to the third party(s) and in case the Owner would be required to face any proceedings all to pay any amount on the aforesaid account, it shall be deemed to have been discharged on behalf of the Successful Bidder, the same amount shall be recovered half-an-hour rest interval in between. The Successful Bidder shall ensure that the attendance of all the supplied manpower shall be taken through biometric attendance machine.

### 11.11 Foreclosure

1. In case of any necessity arising due to local working conditions or any unforeseen reason not in the control of the Owner or of the Successful Bidder, Committee comprising of representative of the Owner, Successful Bidder and Outside Expert from Technical and Financial background shall be constituted and Committee will look into the reasons/causes and analyze the conditions as to whether the work awarded is feasible to continue with the existing terms and conditions of the contract or any other available option or to Fore Close the contract in the interest of both the Owner and the Successful Bidder
2. If after study of the prevailing conditions of the contract under execution, committee recommends to Foreclose the contract keeping in view the financial implication to both the Owner and Successful Bidder, guideline/Modality of the Fore Closure of the contract shall be decided by the committee considering the work executed and unexecuted, period of the contract completed and balance period of the contract, value of the work executed and value of the work unexecuted etc.

### 11.12 Force majeure

1. Force majeure is herein defined as any cause, which is beyond the control of the Successful Bidder or the Owner as the case may be which they could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affect the performance of the contract, such as:
  2. Natural phenomena such as flood, draughts Cyclone, earthquake and epidemics, declaration of war
  3. Acts of any government, including but not limited to war, declared or undeclared priorities, quantities, embargoes, providing either party shall within fifteen (15) days from the occurrence of such a cause notify the other in writing of such cases.
  4. The Successful Bidder will advise, in the event of his having resort to this clause by a registered letter duly certified by the statutory authorities, the beginning and end of the cause of delay, within fifteen days of the occurrence and cessation of such Force Majeure condition. In the event of delay lasting over two months, if arising out of Force Majeure, the contract may be terminated at the discretion of the Owner.



5. For delay arising out of Force Majeure, the extension will be for a period not exceeding the period of delay attributable to the causes of Force Majeure and neither company nor the Successful Bidder shall be liable to pay extra costs (like increase in rates, remobilization, advance, idle charges for labor and machinery etc.) provided it is mutually established that the Force Majeure conditions did exist.
6. If any of the Force Majeure conditions exists in the place of operation of the Successful Bidder even at the time of submission of bid, he will categorically specify them in his bid and state whether they have been taken into consideration in their quotations.
7. The Successful Bidder or the Owner shall not be liable for delays in performing his obligations resulting from any Force Majeure cause as referred to and/ or defined above

### 11.13 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 Work Order, warranty, indemnity, tort (including negligence) strict liability or otherwise, shall either Party be liable to the other for loss of the Work Order, 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 the Successful Bidder to the GMDC, whether under the Work Order, in tort or otherwise, shall not exceed the total Work Order Value, provided that this limitation shall not apply to any obligation of the Successful Bidder to indemnify the GMDC with respect to patent infringement.



## Part 3: Instruction to Bidders

### 1. Introduction

#### 1.1 Bidding process overview

GMDC has adopted a single stage two envelope Bidding system separately for Technical Bid and Price Bid with evaluation as per Quality cum Cost Based System (QCBS) method as detailed out in Section 5 of Part 3 of this document.

Technical Bid and Price Bid shall be submitted online through <https://gmdctender.nprocure.com/>.

The Bids for which the Price Bid is submitted in hard copy / physical form shall be rejected as non-responsive.

Complete Bid shall be submitted on or before the time and date fixed for submission of technical and price Bids as detailed in Section 1.6 of Part 3 of this document. Bids delivered after the due dates will be rejected.

The Bidders need to offer their Bids which conform to the scope of work and terms and conditions detailed in Part 2 of this document.

As a first step, evaluation of Technical Bid will be conducted as per Section 6.2 of Part 3 of this document. Post the evaluation of Technical Bids, the Price Bids of only those Bidders meeting the pre-qualification and technical criteria detailed in Sections 5.1 and 5.2 of Part 3 of this document shall be opened.

Subsequently, a Price Bid evaluation of technically qualified Bidders will be carried out as per Section 6.3 of Part 3 of this document. The Bids will finally be ranked from the highest to lowest according to their combined technical and price scores (described as 'Composite Score') derived based on the Quality cum Cost Based Score (QCBS) specified Section 5.4 of Part 3 of this document. The Bidder obtaining the highest composite score shall be considered as the 'Preferred Bidder'.

#### 1.2 Due diligence

Before Bidding, the Bidder shall undertake and shall be deemed before Bidding to have undertaken a thorough study of the proposed work, the job(s) involved, the plant conditions, the labor, power, water, material and equipment availability, transport and communication facilities and temporary offices and accommodation quarters, and all other factors, constraints, and facilities necessary for the formulation of the Bid, supply of materials and the performance of the work.

The Bidder shall inspect and examine the plant and its surroundings and shall satisfy themselves before submitting their Bid as to the nature of the ground present, physical conditions and all roads, approaches and lands which may be used temporarily otherwise in connection with the works, means of access to the plant accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies & other circumstances which may influence or affect their Bid.

The intending Bidders shall be deemed to have visited the Plant and familiarized themselves thoroughly with the working conditions at the plant before submitting the Bid. Non-familiarity with the Plant conditions will not be considered a reason either for extra claims or for not carrying out the work in strict conformity with the specifications.



It will be imperative on each Bidder to acquaint himself of all local laws, conditions and factors which may have any effect on the execution of works and supplies under the Bid document. In their own interest, Bidder is requested to familiarize themselves with (but not limited to) the Indian Income Tax Act 1961, Indian Companies Act 2013, Customs Act 1962, Factory Act, Contract Labor Act 1970, Arbitration Act 1996, EPF Act 1952, Employees State Insurance Act (ESI) 1948 & other related applicable Acts and Laws & Regulations of India, with their latest amendments, as prevalent in India. Owner shall not entertain any request for clarification from the Bidder regarding such local conditions.

It must be understood and agreed that such factors have properly been investigated and considered while submitting the Bid. No claim for financial and other adjustments to the Contract price, on account of lack of clarity or proper understanding of such factors, shall be entertained.

### 1.3 Acknowledgement by Bidder

By submitting the Bid, the Bidder acknowledges that:

1. It has made a complete and careful examination of the scope of work and terms and conditions mentioned in Part 2 of this document.
2. It has made available all the relevant information requested by GMDC.
3. It accepts the risks of inadequacy, or error due to improper due diligence on its part as described in Section 1.2 of Part 3 of this document.
4. It does not have any conflict of interest.
5. It is bound by the undertakings provided by it under and in terms hereof.

GMDC shall not be liable for any omission, mistake, or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to the RFP or the Bidding Process, including any error or mistake therein or in any information or data given by GMDC.

### 1.4 Cost of Bidding

The Bidders shall be responsible for all the costs associated with the preparation of their Bids and their participation in the Bid Process. GMDC will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

### 1.5 RFP Processing Fee

Bidder shall have to submit non-refundable RFP Document Fee of INR 17,700 (i.e., RFP Processing fee of INR 15,000 plus 18% GST). The RFP Document Fee shall be submitted in the form of a Demand Draft in favor of "**Gujarat Mineral Development Corporation Limited**" and **payable at Ahmedabad** along with the Bid as per marking and sealing section. This Demand Draft for RFP document shall be non-refundable. Bids that are not accompanied by the RFP Processing Fee in acceptable amount and form shall be considered non-responsive and shall be consequently rejected.

***Relaxation in terms of submission of RFP Processing fee shall be given to the Bidder who is holding valid Certificate issued under the MSME Act, 2006 on the date of submission of Bid.***

## 1.6 Schedule of Bidding

The key activities and timelines for the Bidding process have been detailed below. While GMDC shall endeavor to adhere to the timelines, it is subject to approvals and other external contingencies.

Category	Activity	Schedule
<b>RFP release</b>	Issuance of Bid package to Bidders	RFP shall be available from 13 <sup>th</sup> March 2024 from the website <a href="http://www.gmdcltd.com">http://www.gmdcltd.com</a> and <a href="https://gmdctender.nprocure.com/">https://gmdctender.nprocure.com/</a>
<b>Bid queries</b>	Deadline for receiving queries from Bidder	Bidders may send their queries by 3 <sup>rd</sup> April 2024 up to 1700 hrs. on the following e-mail ID: <a href="mailto:assharma@gmdcltd.co.in">assharma@gmdcltd.co.in</a> , <a href="mailto:mndave1@gmdcltd.co.in">mndave1@gmdcltd.co.in</a>
	Pre-Bid meeting	The pre-Bid meeting shall be held at 1100 hrs. on 15 <sup>th</sup> April 2024 at the following address:  Gujarat Mineral Development Corporation Ltd Khanij Bhavan, 132-Ring Road, Gujarat University Ground, Vastrapur, Ahmedabad- 380052
<b>Bid submission and evaluation</b>	Online submission of Price Bid	Bidders shall submit their Price Bids online on <a href="https://gmdctender.nprocure.com/">https://gmdctender.nprocure.com/</a> on or before 30 <sup>th</sup> April 2024 up to 1800 hrs.
	Submission of Technical Bid (hard copy), RFP Processing Fee and EMD in person	Bidders shall submit their Technical Bids on or before 30 <sup>th</sup> April 2024 up to 1800 hrs. at the following address:  Gujarat Mineral Development Corporation Ltd Khanij Bhavan, 132-Ring Road, Gujarat University Ground, Vastrapur, Ahmedabad- 380052  The Technical Bid, RFP Processing fee, and EMD shall be made by Speed Post / RPAD / Hand / Courier
	Technical presentations by Bidders	To be informed to the Bidder in advance
<b>Vendor selection</b>	Evaluation of Technical and Price Bids and selection of Vendor	To be informed to the Bidder after the Bid submission date

## 2. Bid requirements

### 2.1 Bid validity

Bids shall remain valid for a period of not less than 180 (one hundred and eighty) days from the Bid submission date (described as 'Bid Validity Period'). The Bid shall be considered non-responsive if such Bid is valid for a period less than the Bid Validity Period.

In exceptional circumstances, prior to expiry of the original Bid Validity Period, relevant authorities from GMDC may request the Bidders to extend the period of validity for a specified additional period. The request and the responses thereto shall be made in writing. A Bidder may refuse the request without forfeiting its Bid Security / EMD. A Bidder agreeing to the request will not be required or permitted to modify his Bid but will be required to extend the validity of his Bid Security/EMD for the period of the extension, and in compliance with Section 2.5 of Part 3 of this document in all respects.



## 2.2 Number of Bids by Bidder

No Bidder shall submit more than one Bid pursuant to this RFP. If a Bidder submits or participates in more than one Bid, such Bids by the Bidder shall be disqualified.

## 2.3 Governing law and jurisdiction

The Bidding process shall be governed by and construed in accordance with the Indian laws and the courts at Ahmedabad, Gujarat shall have exclusive jurisdiction over all disputes arising under, pursuant to, and / or in connection to the Bidding process.

## 2.4 GMDC's right to accept and reject any Bids or all Bids.

Notwithstanding anything contained in this RFP, GMDC reserves the rights to accept or reject any Bid and to annul the Bidding process / Bid evaluation process and reject all Bids at any time without any liability or any obligations for such acceptance, rejection, or annulment, without assigning any reasons thereof.

It shall be deemed that by submitting the Bids, the Bidder agrees and releases GMDC, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and / or performance of any obligations hereunder, pursuant hereto and / or in connection to the Bidding process and waives, to the fullest extent permitted by Applicable Laws, any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or in future.

Without prejudice to the generality of the above terms, GMDC reserves the right to reject any Bid if:

1. The Bid does not meet the technical eligibility and qualification criteria specified in this RFP
2. A material misrepresentation is made or discovered at any time, or if the Bidder is found to be indulging in fraudulent and corrupt practices.
3. The Bidder does not provide, within the time specified by GMDC, the supplemental information sought by GMDC for evaluation of the Bid.
4. The Bidder submits a conditional Bid.

If such disqualification / rejection occurs after the Bids have been opened and the Preferred Bidder as per award criteria gets disqualified / rejected, then GMDC reserves the right to consider the next best Bidder or take any other measure as may be deemed fit in the sole discretion of GMDC, including annulment of the process.

## 2.5 Earnest Money Deposit (EMD) / Bid Security

The Bidder shall furnish a separate Bid Security (described as 'Earnest Money Deposit') as part of its Bid as per the given format. The Bid Security / EMD shall be sealed in separate sealed envelope along with the RFP Processing fee, as described in Section 4.4 of Part 3 of this document. An amount of INR 7.25 Cr shall be approved as EMD from the banks approved by Government of Gujarat except cooperative banks, in favor of "Gujarat Mineral Development Corporation Ltd." The list of approved banks has been listed in Annexure 19.

The EMD shall be in any of the below mentioned format:

1. Account payee Demand Draft / Banker's Cheque
2. An irrevocable Bank Guarantee, as per Annexure 18, payable at Ahmedabad and valid for a period of 210 (two-hundred and ten) days from the Bid submission date in the prescribed format. The validity of the bank guarantee may be extended as per mutual agreement between GMDC and the Bidder, as per Section 2.1 of Part 3 of this document.

Any Bid not accompanied with valid Earnest Money Deposit and RFP Processing fee in the acceptable amount, form, and validity period will be summarily rejected by GMDC as being non-responsive and Bids of such Bidder shall not be evaluated further. The Bidder shall also submit a blank cheque along with the bid submission, providing the Bidder's bank details to GMDC.

GMDC shall not be liable to pay any interest on the Bid Security/EMD deposit and the same shall be interest free.

The EMD shall be furnished in Indian Rupees only.

The Bid Security of unsuccessful Bidders will be returned by GMDC, as promptly as possible on acceptance of the Bid of the Preferred Bidder or if and when GMDC cancels the Bidding process. Where Bid Security has been paid by Demand Draft/ Banker's Cheque deposit, the refund thereof shall be in the form of an account payee demand draft in favor of the unsuccessful Bidder(s). Bidders may, by specific instructions in writing to GMDC, give the name and address of the person in whose favor the said demand draft shall be drawn by GMDC for refund, failing which it shall be drawn in the name of the Bidder and shall be mailed to the address given on the Bid.

The Preferred Bidder's EMD will be returned, without any interest, upon the Preferred Bidder signing the Agreement and furnishing the Performance Security in accordance with the provision thereof or if and when GMDC cancels the Bidding.

GMDC shall be entitled to forfeit and appropriate the Bid Security as damages inter alia in any of the events specified below. The Bidder, by submitting its Bid, shall be deemed to have acknowledged and confirmed that GMDC will suffer loss and damage on account of withdrawal of its Bid or for any other default by the Bidder during the period of Bid validity as specified in this RFP. No relaxation of any kind on Bid Security shall be given to any Bidder.

1. If a Bidder engages in corrupt, fraudulent, coercive, undesirable, or restrictive practices as specified in Section 8 of Part 3 of this document.
2. If a Bidder withdraws its Bid during the Bid validity period as specified in this RFP and as extended by mutual consent of the respective Bidder(s) and GMDC
3. In the case of a Successful Bidder if it fails within the specified time limit:
  - a. to sign and return the duplicate copy of LOA.
  - b. to sign the Agreement within the time period specified by GMDC.
  - c. to furnish the Performance Security within the period prescribed therefore in the RFP, or commits any breach prior to furnishing the Performance Security

***Relaxation in terms of submission of EMD shall be given to the Bidder who is holding valid Certificate issued under the MSME Act, 2006 on the date of submission of Bid to this RFP.***



### 3. Pre-Bid activities

#### 3.1 Content of the RFP

This RFP comprises of the content listed below and may additionally include any addenda issued in accordance with Section 3.4 of Part 3 of this document.

Part 1: Introduction

Part 2: Terms of reference / Scope of work

Part 3: Instructions to Bidders

Part 4: Annexures

#### 3.2 Clarification to RFP document

Bidders requiring any clarification on the RFP may notify GMDC in writing through email at the address provided in Section 1.6 of Part 3 of this document.

Bidders must send in their queries on or before the date mentioned in Section 1.6 of Part 3 of this document in order to enable GMDC to have adequate notice of the said queries so that the same can be addressed at the Pre-Bid Meeting or shortly later.

GMDC shall endeavor to respond to the queries within a short span of time prior to the Bid submission date.

GMDC is not bound to take cognizance of any queries raised after the date specified in Section 1.6 of Part 3 of this document.

GMDC shall endeavor to respond to the questions raised or clarifications sought by the Bidders. However, GMDC reserves the right not to respond to any question or provide any clarification, at its sole discretion, and nothing in this section shall be taken or read as compelling or requiring GMDC to respond to any question or to provide any clarification.

GMDC may also on its own motion, if deemed necessary, issue interpretations and clarifications and amendment to RFP. All clarifications and interpretations issued by GMDC shall be deemed to be part of the Bidding documents. Verbal clarifications and information shall not in any way or manner be binding on GMDC.

#### 3.3 Pre-Bid meeting

A pre-Bid meeting would be held at time and an address specified in Section 1.6 of Part 3 of this document. Bidders are advised to attend the meeting and will do so at their own expense.

During the pre-Bid meeting, the Bidders will be free to seek clarifications and make suggestions for consideration of GMDC. GMDC shall endeavor to provide clarifications and such further information as it may, in its sole discretion, considered appropriate for facilitating a fair, transparent, and competitive Bidding process.

Responses to Bidders' clarification would be shared by uploading such responses online on GMDC's website (i.e., <http://www.gmdcltd.com> and <https://gmdctender.nprocure.com/>), if required, in the form of an addendum and or corrigendum.

Non-attendance at the pre-Bid meeting shall not be a cause for disqualification of a Bidder. However, terms and conditions of the addendum(s) shall be legally binding on all the Bidders irrespective of their attendance at the pre-Bid meeting.



### 3.4 Amendment of RFP document

At any time prior to the Bid submission date, GMDC may, for any reason, whether at its own initiative or in response to clarifications requested by a Bidder, modify the RFP by the issuance of an addenda/corrigendum.

Any addendum/corrigendum issued hereunder will be in writing and shall be uploaded on GMDC's website <http://www.gmdcltd.com> and <https://gmdctender.nprocure.com/>.

In order to afford the Bidders a reasonable time for taking an addendum into account, or for any other reason, GMDC may, in its sole discretion, extend the Bid submission date.

## 4. Preparation and submission of Bids

### 4.1 Language of Bid

The Bids and all related correspondence and documents in relation to the Bidding process shall be in English language. All supporting documents and printed literature furnished by the Bidders with the Bid may be in any other language provided that they are accompanied by translations in the English language, duly authenticated and certified by the Bidder.

The Bidders shall ensure that any number mentioned in the Bid shall be followed by words in relation to such numerical format of the number, and in the event, there is a conflict in the numerical and the word format of the number, the number provided in words shall prevail.

### 4.2 Bid currency

All prices quoted in the Bid shall be quoted in Indian National Rupee(s) (INR).

### 4.3 Format and signing of Bid

The Bidder shall provide all the information sought under this RFP. GMDC will evaluate only those Bids that are received in the required formats and complete in all respects.

The Bid must be properly signed by the authorized signatory as detailed: Duly authorized person holding a Power of Attorney in case Bidder is either a Limited Company or a Limited Liability Partnership firm.

In case of the Bidder being Company incorporated under Indian Companies Act 1956/2013, the Power of Attorney shall be supported by a Board Resolution in favor of the person vesting power to the person signing the Bid.

### 4.4 Sealing and marking of Bids

#### 4.4.1. EMD and RFP processing fee

The original instruments of the Bid Security of the required value and in the approved format as specified in Section 2.5, along with the RFP processing fee as specified in Section 1.5 shall be sealed in an envelope on which the following shall be superscribed:

**"RFP No. GMDC/Power/ATPS/19/23-24 for Comprehensive Operations and Maintenance Partner for GMDC's 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat".**

#### 4.4.2. Technical Bid

The technical Bid shall be submitted in hard copy and shall include the following documents:

S. No	Reference	Document details
1	Annexure 7	Letter of Bid submission signed by authorized signatory of Bidder
2	Annexure 8	Bidder's experience and credentials <ul style="list-style-type: none"> <li>– Certificate of incorporation, MoA, AoA, GSTIN registration</li> <li>– Evidence for work experience of similar nature – copy of work order, Contract and completion certificate, or Contract awarded, and threshold amount received if client documents are confidential</li> </ul>
3	Annexure 9	Declaration of Key Personnel as per requirements of the RFP
4	Annexure 10	Statutory auditor/registered chartered accountants statement specifying revenue for last three financial years, net worth, and working capital for last financial year
5	Annexure 11	No blacklisting certificate on stamp paper
6	Annexure 12	No deviation certificate
7	Annexure 13	Authorization of signatory in the form of Board Resolution/ or Power of Attorney (POA notarized and Applicable in case of Bid not being signed by the person directly authorized by the firm), as applicable
8	Annexure 14	Undertaking regarding geniuses of documents
9	Annexure 15	Undertaking of Indemnity
10		RFP documents issued along with updated addendums/amendments and along with Annexure 1 to 7 thereto, duly signed by the Bidder through its authorized signatory on all pages.

The documents required as part of the Technical Bid shall be submitted in hard copy in person as per the required format. All the documents shall be placed and sealed in an envelope on which the following shall be superscribed:

**“RFP No. GMDC/Power/ATPS/19/23-24 for Comprehensive Operations and Maintenance Partner for GMDC’s 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat– Technical Bid”.**

Both envelopes specified in sections 4.4.1 and 4.4.2 shall be placed in an outer envelope and the following shall be superscribed:

**“RFP No. GMDC/Power/ATPS/19/23-24 for Comprehensive Operations and Maintenance Partner for GMDC’s 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat – Bid Submission”.**

#### 4.4.3. Price Bid

Price Bid shall be duly filled by the Bidder at designated places on <https://gmdctender.nprocure.com/> as per the format provided in the Annexure 16.



#### 4.5 Bid submission date

The last date and time of submission of the Bids (the “Bid submission date”) are specified in Section 1.6. The Bidders shall duly submit their Technical and Price Bids according to the dates specified.

GMDC may, in its sole discretion, extend the Bid submission date by issuing an addendum uniformly for all Bidders as per Section 3.4. In such event, the extended Bid submission date shall be applicable for all Bidders. Any such change in the Bid submission date shall be notified to the Bidders by uploading the addenda on GMDC’s website <http://www.gmdcltd.com> and <https://gmdctender.nprocure.com/>.

#### 4.6 Late submission

Physical submissions for Technical Bid and EMD and RFP Processing fee received by GMDC after the specified time and date shall not be eligible for consideration and shall be summarily rejected.

GMDC shall not be responsible for any delay or non-receipt / non-delivery of any documents/ or technical issues pertaining to online Bid. The Bidder is expected to take its registration for e-tendering well in time and complete all procedure relating to e-submission well in time so that there is time for handling any technical glitches. Bidders who are not familiar with the procedure for online Bidding may use the training made available by e Bidding platform nProcure. The contact details of nProcure are as follows:

**nCode Solutions (A Division of GNFC Ltd.)**  
**403, GNFC Infotower, Bodakdev,**  
**Ahmedabad - 380054, India**  
**Sales: 079-4000 7323**  
**Support: 079-4000 7300**  
**Email: [nprocure@ncode.in](mailto:nprocure@ncode.in)**

#### 4.7 Modification and withdrawal of Bids

Bidder shall not be able to modify any part of its Bid after the Bid submission date. In order to avoid forfeiture of Bid Security, a Bidder may withdraw its Bid after online submission thereof. The Bidder may modify, substitute, or withdraw its Bid online after submission, prior to the Bid submission date.

Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid submission date, unless the same has been explicitly sought for by GMDC, shall be disregarded.

## 5. Bid evaluation criteria

### 5.1 Pre-qualification criteria

Category	Parameter	Supporting docs
<b>Statutory</b>	Registered in India under Indian Companies Act 1956/2013 or Limited Liability Partnership firm registered under LLP act in India	Registration certificate/certificate of Incorporation of business
	At least one office in India which has been operational for the last three years or more	Certificate of incorporation, MoA, AoA, GSTIN registration
	Not blacklisted by any Public Sector Undertaking (PSU) / Central or State Government in India / Central or State Government undertaking	- No blacklisting certificate - On 300 Rs. Stamp paper
	Consortiums are not permitted to participate in the Bidding process	
<b>Financial</b>	Average audited annual revenue of INR 150 Cr per annum for last three years (FY2021 to FY2023)	- Revenue and net worth statement - On auditor's / CA's letterhead, signed with seal
	Positive net worth as on 31 <sup>st</sup> March 2023	- Revenue and net worth statement - On auditor's / CA's letterhead, signed with seal
<b>Operational</b>	At least one Contract of similar works <sup>1</sup> of yearly value > INR 60 Cr, or two Contracts of yearly value > INR 37.5 Cr each, or three Contracts of yearly value > INR 30 Cr each in the last seven years (ending on when RFP is floated)	Relevant portions of the work order /Contract / completion certificate for Contracts undertaken. In case the client serviced is confidential, the Bidder shall provide a self-certification with document evidence including work order / relevant sections of the contract / agreement. In case the similar work has been done in-house, self-certification with a logical methodology to assess the value of the work.

<sup>1</sup>Similar works include O&M of entire coal or lignite based thermal power Plant as part of a single Contract / Agreement / Work Order (piece-wise contracts awarded from a single client with the same period to be considered as one contract) for a thermal power Plant (single plant should not be less than 100 MW)

## 5.2 Technical Score

The Technical Bids of Bidders meeting pre-qualification criteria shall be considered for evaluation and assignment of technical scores. The technical evaluation will be conducted in two steps, evaluation of technical Bids and evaluation of technical presentation. The Technical Score (TeS) will be computed as the sum of the scores in technical Bid and technical presentation.

### 5.2.1. Technical Bid

The score of the Bidder's Technical Bid shall be evaluated as per the scoring system detailed below.

Category	Criteria	Thresholds	Max Score	Verification
<b>Prior Experience</b> (25 marks)	Cumulative O&M projects for coal or lignite based thermal power Plant in terms of MW	10 points - $\geq$ 1000 MW 8 points - $\geq$ 800 MW 6 points - $\geq$ 600 MW 4 points - $\geq$ 400 MW 2 point - $\geq$ 200 MW 0 points - $<$ 200 MW	5	Documentary evidence including relevant portions of the work order / Contract with completion certificate for contracts undertaken (Annexure 8)
	Number of O&M projects for coal or lignite based thermal power Plant	10 points - $\geq$ 5 projects 8 points - 4 projects 6 points - 3 projects 4 points - 2 projects 2 points - 1 project 0 - no projects	5	
	Experience of O&M of a CFBC boiler in India or abroad	5 points - Yes 0 points - No	5	
	Experience of working with any central/ state/ or PSUs organization	5 points - Yes 0 points - No	5	
	Number of years of experience in O&M services for coal or lignite based thermal power Plants	10 points - $\geq$ 5 years 8 points - $\geq$ 4 years 6 points - $\geq$ 3 years 4 points - $\geq$ 2 years 2 point - $\geq$ 1 years 0 points - $<$ 1 years	5	
<b>Regional Logistics Capabilities</b> (5 marks)	Experience of working as O&M service provider or in house O&M capability in Gujarat state	5 points - Yes 0 points - No	5	
<b>Workforce Capabilities</b> (30 marks)	Number of employees and or sub-contracted workforce for O&M services in a single	5 points - $\geq$ 500 employees 4 points - $\geq$ 400 employees 3 points - $\geq$ 300 employees	3	

	thermal power Plant project	2 points - $\geq 200$ employees 1 point - $< 200$ employees		
	Plant Head as mentioned in Annexure 5	20+ years' exp. – 5 <20 years' exp. – 3 <15 years' exp. – 0	5	Self-declaration of workforce capabilities (Annexure 9) Self-declaration of workforce capabilities (Annexure 9) <sup>1</sup>
	Managers as mentioned in Annexure 5	10+ years' exp. – 2 (per function as mentioned in Annexure 5) <10 years' exp. – 1 (per function as mentioned in Annexure 5) <8 years' exp. – 0 (per function as mentioned in Annexure 5)	2	
	In-Charges as mentioned in Annexure 5	10+ years' exp. – 2 (per function as mentioned in Annexure 5) <10 years' exp. – 1 (per function as mentioned in Annexure 5) <8 years' exp. – 0 (per function as mentioned in Annexure 5)	2	
<b>Technical presentation</b> (40 marks)	As per parameters defined in Section 5.2.2	As per scores defined in section 5.2.2	<b>40</b>	
		<b>Total</b>	<b>100</b>	

<sup>1</sup> CVs to be submitted for the key personnel mentioned in the table below; key personnel to be deployed for the contract basis the CVs submitted.

All key personnel will be interviewed by the Owner and approved; Any replacement of key personnel (whose CV has been originally submitted) by equivalent member (whose CV has not been originally submitted) should be interviewed and approved by the Owner.

### 5.2.2. Technical Presentation

The Technical Bid will be accompanied by a Technical Presentation to the Bid evaluation committee. Bidders shall prepare a presentation in PPT format and will be evaluated along the parameters detailed below. The Bidder shall, therefore, ensure appropriate details are incorporated in the presentation to be evaluated comprehensively. The score of the Bidder's Technical Presentation shall be evaluated as per the scoring system detailed below.

Category	Parameter	Score
<b>Technical capabilities</b> <i>(10 marks)</i>	Successful case studies of achieving target levels of availability with evidence of incentives earned, if any, compliance to preventive maintenance, forced outage, PLF at O&M projects for coal or lignite based thermal power Plants including key activities for improvement and sustenance of asset performance	10
<b>Key personnel</b> <i>(15 marks)</i>	Personnel with required qualifications and prior experience in O&M for coal or lignite based thermal power Plants where each plant is not less than 100 MW Proposed team and organizational structure, including details of the key personnel (as mentioned in Annexure 5)	15
<b>Approach and methodology</b> <i>(15 marks)</i>	Plan for operation activities to achieve target PLF and PAF, including potential risks, their mitigation measures, and type of support provided by the technical team from HO of the Bidder. Transition and takeover plan (including workforce deployment, mobilization plans for smooth takeover) Maintenance strategy with Preventive, routine, outage maintenance plan Spares management strategy (Inventory management, alternate/ indigenous supplier lists for critical spares, etc.)	15
<b>Total</b>		<b>40</b>

### 5.3 Financial Score

The Bidders obtaining a Technical Score (sum of scores of Technical Bid and Technical Presentation) of minimum 60 (sixty) shall be considered as technically qualified Bidders. The Price Bid of only the technically qualified Bidders shall be opened.

The Bidders shall be required to quote the Lumpsum Charges for Operations and Maintenance for Year 1 and the annual escalation rate applicable for the remaining 2 years, through online submission of Price Bids as per Annexure 16.

The Financial Score shall then be evaluated as follows:

$$\text{Financial Score(FiS)} = \frac{\text{FiL}}{\text{FiC}} \times 100$$

Where,

FiL is the L1 (Lowest Bidder)'s Total Lumpsum Charges for 3 years calculated on the basis of his quotation on Lumpsum Charges for Operations and Maintenance for Year 1 and the annual escalation rate applicable for the remaining 2 years as per Annexure 16.



FiC is the Bidder's Total Lumpsum Charges for 3 years calculated on the basis of his quotation on Lumpsum Charges for Operations and Maintenance for Year 1 and the annual escalation rate applicable for the remaining 2 years as per Annexure 16.

The Bidder recording the lowest Total Lumpsum Charges for 3 years among all technically qualified Bidders shall be given maximum score of 100.

#### 5.4 Composite score

The Composite Score of the Bidders shall be computed using the Technical Score and the Financial Score as follows:

Composite Score (CS) = Technical Score (TeS) × 70% + Financial Score (FiS) × 30%

The technical criteria have been assigned a weightage of 70% while the commercial criteria have been assigned a weightage of 30%.

The Bidder obtaining the highest Composite Score shall be declared the Preferred Bidder. In case of a tie between two or more Bidders based on the Composite Score (i.e., two or more Bidder obtain the same Composite Score), the Bidder securing the higher Technical Score (TeS) among the tied Bidders shall be declared as the Preferred Bidder.

After discussions at the discretion of GMDC, the LOA would be granted to the Preferred Bidder who would then be the Successful Bidder with whom the Agreement shall be signed.

### 6. Bid evaluation process

#### 6.1 Opening of technical Bid

The Bidder's names, the presence or absence of requisite RFP Processing Fee and Bid Security and such other details, as GMDC in its sole discretion may consider appropriate, shall be announced at the opening of Technical Bid.

GMDC will subsequently examine and evaluate Technical Bids in accordance with the provisions set out hereunder in Section 6.2.

#### 6.2 Evaluation of technical Bid

The Bidders shall be required to submit documents as per Section 4.4.2 along with supporting documents. GMDC shall examine and evaluate the Technical Bids as per the evaluation steps specified below.

##### 6.2.1. Test of responsiveness

Prior to evaluation of the Technical Bids, GMDC shall determine whether each Bid is responsive to the requirements of the RFP. A Bid shall be considered responsive only if:

1. The EMD, RFP Processing Fee, and Technical Bids are submitted in hard copy as per the appropriate formats in person as per Section 4.4.1 and 4.4.2 within the Bid submission date.
2. The Price Bid is submitted online as per the appropriate format within the Bid submission date.
3. It does not contain any conditionality.
4. It is not non-responsive to the terms hereof and any other condition specified elsewhere in the RFP.



GMDC reserves the right to reject any Bid which is non-responsive and no request for alteration, modification, substitution, or withdrawal shall be entertained by GMDC in respect of such Bid.

Evaluation of pre-qualification criteria and document checks of only those Bidders shall be carried out whose Bids determined to be responsive.

### **6.2.2. Assessment of pre-qualification criteria**

GMDC shall examine and evaluate the pre-qualification of each Technical Bid upon determining its responsiveness as per Section 6.2.1.

The Bidder must meet pre-qualification criteria specified in Section 5.1 and have submitted all documents as per Section 4.4 in order to qualify for next stage of assessment.

Evaluation of Technical Bids to assign Technical Score of only those Bidders shall be carried out whose Bids are meeting the pre-qualification criteria and submitted all required documents.

### **6.2.3. Determination of technical score**

GMDC shall examine and assign Technical Score to each pre-qualified Bid as per the scoring mechanism described in Section 5.2

The Technical Score of each Bid shall be calculated as the sum of the scores obtained in Technical Bid and Technical Presentation.

The Bids of the Bidders determined to be responsive, meeting the pre-qualification criteria, and obtaining a Technical Score of minimum 70 will be declared as technical qualified Bids, and the Bidders thereby shall be declared as technically qualified Bidders.

## **6.3 Evaluation of Price Bid**

The Bidders shall be required to submit documents as per Section 4.4.3. GMDC shall examine and evaluate the Price Bids as per the evaluation steps specified below.

### **6.3.1. Opening of Price Bid**

The Price Bids of only the Bidders determined to be responsive and meeting the Pre-Qualification Criteria and obtaining required Technical Score in accordance with Section 6.2 shall be opened.

The time and date of opening of Price Bids shall be informed to the Bidders who are declared as technical qualified Bidders pursuant to Section 6.2.3 in advance. The name of Bidder, bid rates, etc. will be announced at such opening.

### **6.3.2. Determination of financial score**

GMDC shall determine the Financial Score for each technical qualified Bid as specified in Section 5.3.

## **6.4 Determination of composite score**

The Technical Score and Financial Score obtained by the Bidder shall be combined as per the formula provided in Section 5.4.

The Bidder obtaining the highest Composite Score shall be declared the Preferred Bidder. In case of a tie between two or more Bidders based on the Composite Score (i.e., two Bidder obtain the same Composite Score), the Bidder securing the higher Technical Score (TeS) among the tied Bidders shall be declared as the Preferred Bidder.



After discussions at the discretion of GMDC, the LOA would be granted to the Preferred Bidder who would then be the Successful Bidder with whom the Agreement shall be signed.

## 6.5 Clarification of Bids and request for information

To facilitate evaluation of Bids, GMDC may, at its sole discretion, seek in writing, clarifications / documents / missing information from any Bidder pertaining to its Bid. If the response from the Bidder is not received by GMDC before the expiration of the deadline prescribed in the written request, GMDC reserves the right to proceed with the evaluation process at the total risk and cost of the Bidder.

## 6.6 Verification and disqualification

GMDC reserves the right to verify all statements, information and documents submitted by the Bidder in response to the RFP and the Bidder shall, when so required by GMDC, make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification by GMDC shall not relieve the Bidder of its obligations or liabilities hereunder nor will it affect any rights of GMDC there under.

GMDC reserves the right to reject any Bid and / or appropriate EMD if:

1. At any time, a material misrepresentation in terms of misleading or false representation is made or uncovered, or
2. The Bidder does not provide, within the time specified by GMDC, the supplemental information sought by GMDC for evaluation of the Bid.
3. In case of fraudulent Bid and the Bidder is found to be involved in fraudulent and corrupt practice as per Section 8.
4. In case the Bidder has any conflict of interest as per Section 9.
5. A Bidder makes an effort to influence GMDC in its decisions on the evaluation process / selection process.
6. While evaluating the Bid, if it comes to GMDC's knowledge expressly or implied, that some Bidders may have compounded in any manner whatsoever or otherwise joined to form an alliance resulting in distorting competitive price discovery or delaying the processing of proposal.
7. Record of poor performance such as abandoning the work, rescinding of Contract for which the reasons are attributable to the non-performance of the Bidder, consistent history of litigation awarded against the applicant or financial failure due to bankruptcy.
8. A Bidder submits or participates in more than one Bid under this RFP.

If such disqualification / rejection occurs after the Bids have been opened and the Preferred Bidder as per award criteria gets disqualified / rejected, then GMDC reserves the right to consider the next best Bidder or take any other measure as may be deemed fit in the sole discretion of GMDC, including annulment of the process.

In case it is found during the evaluation of Bids or at any time before signing of the Contract or after its execution and during the period of subsistence thereof, that one or more of the pre-qualification criteria / technical criteria have not been met by the Bidder, or the Bidder has made material misrepresentation or has given any materially incorrect or false information, the Bidder shall be disqualified forthwith if not yet appointed as the Bidder



either by issue of the LOA or entering into the Contract, and if the Successful Bidder has already been issued the LOA or has entered into the Contract, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this RFP, be liable to be terminated, by a communication in writing by GMDC to the Successful Bidder or the Bidder, as the case may be, without GMDC being liable in any manner whatsoever to the Successful Bidder or the Bidder. In such an event, GMDC shall be entitled to forfeit and appropriate the EMD or Performance Security, as the case may be, without prejudice to any other right or remedy that may be available to GMDC under the RFP and/or the Contract.

## **6.7 Contacts during Bid evaluation**

Bids shall be deemed to be under consideration immediately after they are opened and until such time GMDC makes official intimation of award/ rejection to the Bidders. While the Bids are under consideration, Bidders and/ or their representatives or other interested Parties are advised to refrain, save and except as required under the Bidding documents, from contacting by any means, GMDC and/ or their consultants/ employees/representatives on matters related to the Bids under consideration.

## **6.8 Correspondence with Bidder**

Save and except as provided in this RFP, GMDC shall not entertain any correspondence with any Bidder in relation to acceptance or rejection of any Bid.

## **6.9 Confidentiality**

Information relating to the examination, clarification, evaluation, and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising GMDC in relation to, or matters arising out of, or concerning the Bidding process. GMDC will treat all information, submitted as part of the Bid, in confidence and will require all those who have access to such material to treat the same in confidence. GMDC may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/ or GMDC or as may be required by law or in connection with any legal process.

## **7. Appointment of Bidder**

### **7.1 Notification of award**

Prior to expiry of the Bid Validity Period, GMDC shall notify the Preferred Bidder as the Successful Bidders through letter that their Bid has been accepted. This letter ("Letter of Award"/ "LOA") shall be issued, induplicate, and shall specify the sum which GMDC shall pay to the Successful Bidder and sum that the Successful Bidder shall pay to GMDC in consideration of scope as per the terms of Contract.

Successful Bidder shall, within 7 (seven) days of the receipt of the LOA, sign and return the duplicate copy of the LOA in acknowledgement thereof. In the event the duplicate copy of the LOA duly signed by the Successful Bidder is not received by the stipulated date, GMDC may, unless it consents to extension of time for submission thereof, appropriate the Bid Security of such Bidder as damages on account of failure of the Successful Bidder to acknowledge the LOA, and the next eligible and qualified Bidder may be considered.

## 7.2 Signing of agreement

After acknowledgement of the LOA as aforesaid by the Successful Bidder, it shall cause the Successful Bidder, subject to furnishing the Performance Security as per the RFP provisions, to execute/sign the Agreement within the 30 (thirty) days from the date of LOA.

The Successful Bidder shall get 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 the Successful Bidder.

After the signing of Agreement, the Successful Bidder shall be called the "Contractor".

## 7.3 Performance Security

The Successful Bidder shall furnish 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 18) for amount of equivalent to 10% (Ten percent) of the Lumpsum Charges for Operations and Maintenance Package (without GST) quoted, payable to GMDC by the Successful Bidders (the "Performance Security") from the banks approved by Government of Gujarat except Co-Operative banks. 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. The list of approved banks has been listed in Annexure 19.

The Successful Bidder will be bounded for conflict resolution for a period of 12 (twelve) months after the completion of the Contract. Hence, the Bidder shall maintain a valid and binding Performance Security for a period of 36 (thirty-six) months. The Bidder 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 6 (six) months. In case tenure of the Contract is extended then the Bidder shall have to renew Performance Security for a period of extended tenure.

If the Successful Bidder, fails to furnish the Performance Security, it shall be lawful for GMDC to forfeit the EMD and cancel the Contract or any part thereof.

GMDC shall be entitled to forfeit and appropriate the amount of the Performance Security in whole or in part:

1. in the event GMDC requires to recover any sum due and payable to it by the Bidder including but not limited to damages; and which the Bidder has failed to pay in relation thereof; and
2. in relation to Bidder's breach in accordance with the terms contained in the Agreement

At any time during the Validity Period, the Performance Security has either been partially or completely been encashed by GMDC in accordance with the provision of the Agreement, the Bidder shall within 15 (fifteen) days of such encashment either replenish, or provide a fresh Performance Security, as the case may be, failing which GMDC shall be entitled to terminate the Agreement.



At the end of the tenure of the Contract, the Performance Security shall be returned to the Bidder without any interest, subject to any deductions which may be made by GMDC in respect of any outstanding dues under the terms of the Agreement.

#### 7.4 Proprietary data

Subject to the provisions of Section 6.9, all documents and other information provided by GMDC or submitted by Bidder to GMDC shall remain or become the property of GMDC. Bidder is to treat all information as strictly confidential. GMDC will not return any Bid, or any information related thereto. All information collected, analyzed, processed or in whatever manner provided by the Bidder to GMDC in relation to the assignment pursuant to the scope of work / terms of reference shall be the property of GMDC.

#### 7.5 Tax liability

The rates quoted in Price Bid Annexure 16 shall be inclusive of all taxes, duties, surcharge Levies etc. as applicable except applicable Goods and Service Tax. Applicable GST at the time of invoicing shall be reimbursed by GMDC.

GMDC 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.

### 8. Fraudulent and corrupt practices

The Bidders and their respective officers, employees, agents, and advisers shall observe the highest standard of ethics during the Bidding process and subsequent to the issue of the LOA and during the subsistence of the Contract. Notwithstanding anything to the contrary contained herein, or in the LOA or the Contract, GMDC may reject a Bid, withdraw the LOA, or terminate the Contract, without being liable in any manner whatsoever to the Bidder, if it determines that the Bidder or as the case may be, has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice, or restrictive practice in the Bidding process. In such an event, GMDC shall be entitled to forfeit and appropriate the EMD, as the case may be, without prejudice to any other right or remedy that may be available to GMDC under the Bidding documents and/ or the Contract, or otherwise. In case of cancellation of Contract, if already awarded, GMDC shall be entitled to recover from the Bidder the amount of any loss arising from such cancellation in accordance with provisions of RFP document.

Without prejudice to the rights of GMDC hereinabove and the rights and remedies which GMDC may have under the LOA or the Contract or otherwise if a Bidder as the case may be, is found by GMDC to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding process, or after the issue of the LOA or the execution of the Contract and/or otherwise, such Bidder shall not be eligible to participate in any RFP or RFP issued by GMDC during a period of 2 (two) years from the date of identification of such practice.

For the purposes of this Section 8, the following terms shall have the meaning hereinafter respectively assigned to them:

1. **“Corrupt practice”** shall mean (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of GMDC who

is or has been associated in any manner, directly or indirectly, with the Bidding process or the LOA or has dealt with matters concerning the Contract or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of GMDC, shall be deemed to constitute influencing the actions of a person connected with the Bidding process); or (ii) engaging in any manner whatsoever, whether during the Bidding process or after the issue of the LOA or after the execution of the Contract, any person in respect of any matter relating to the LOA or the Contract or otherwise, who at any time has been or is a legal, financial or technical adviser of GMDC in relation to any matter concerning the assignment

2. **“Fraudulent practice”** shall mean a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding process.
3. **“Coercive practice”** shall mean impairing or harming, or threatening to impair or harm, directly or indirectly, any person or property to influence any person’s participation or action in the Bidding process.
4. **“Undesirable practice”** shall mean (i) establishing contact with any person connected with or employed or engaged by GMDC with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding process; or (ii) having a Conflict of Interest as per Section 9.
5. **“Restrictive practice”** shall mean forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Bidding process.

## 9. Conflict of interest

The Bidder shall not have a conflict of interest that may affect the selection process. Any Bidder found to have a conflict of interest shall be disqualified. In the event of disqualification, GMDC shall forfeit and appropriate the Bid Security, if available, or as mutually agreed genuine pre-estimated compensation and damages payable to GMDC for, inter alia, the time, cost, and effort of GMDC including consideration of such Bid, without prejudice to any other right or remedy that may be available to GMDC hereunder or otherwise.

GMDC requires that the appointed Bidder provide professional, objective, and impartial advice and at all times hold GMDC’s interest’s paramount, avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Bidder shall not accept or engage in any assignment that would conflict with its prior or current obligations to other clients, or that may place it in a position of not being able to carry out the assignment in the best interests of GMDC.

Without limiting the generality of the above, shall be deemed to have a conflict of interest affecting the selection process, if the relationship between two Bidders is established through common holding, either directly or through associates, of at least 26% holding of equity/profit sharing in another company/firm, or in each other and other terms as specified hereunder:

1. The Bidder, its member or associate (or any constituent thereof) and any other Bidder, its member or associate (or any constituent thereof) have common controlling Ownership interest. Common controlling Ownership interest for Company, Limited Liability Partnership Firm is defined as follows. Associates of the Bidding firm shall mean parent and/or subsidiary and/or sister concerned firm having meaning specified in definition section:



- a. **If Bidder is a Company:** In such case, the Bidder (including its associate or any shareholder thereof of Bidder and/or its associates) possessing over 26% of the paid up and subscribed capital in its own company or associate as the case may be, also holds:
  - i. more than 26% of the paid up and subscribed equity capital in the other Bidder, its member or associate of such other Bidder or associates is company and/or
  - ii. More than 26% of profit sharing in other Bidder or associates such other Bidder or associates is a Limited Liability Partnership firm and/or
- b. **If Bidder is a Limited Liability Partnership Firm:** In such case, the Bidder or its partners or associate having a profit sharing of more than 26% of such Bidder or its partners or associate as the case may be also holds:
  - i. more than 26% of the paid up and subscribed equity capital in the other Bidder or associate of such other Bidder, its member or associates is company and/or
  - ii. more than 26% of profit sharing in other Bidder or its associates such other Bidder or its associates is a Limited Liability Partnership firm and/or
2. A constituent of such Bidders is also a constituent of another Bidders, or
3. Such Bidders receive or has received any direct or indirect subsidy or grant from any other Bidder/s, or has provided any such subsidy to any other Bidders, or
4. Such Bidder has the same legal representative for purposes of this Bid as any other Bidders or
5. such Bidders have a relationship with another Bidders, directly or through common third Parties, that puts them in a position to have access to each other's' information about, or to influence the Bid of either or each of the other Bidders or
6. there is a conflict among this and other assignments of the Bidder (including its personnel and other members, if any) and any subsidiaries or entities controlled by such Bidder or having common controlling shareholders. The duties of the Bidder will depend on the circumstances of each case. While providing services to GMDC for this assignment, the Bidder shall not take up any assignment that by its nature will result in conflict with the present assignment.
7. The Bidder shall furnish an affirmative statement as to the existence of, or potential for conflict of interest on the part of the Bidder due to prior, current Contracts, engagements, or affiliations with GMDC. Additionally, such disclosure shall address any and all potential elements (time frame for service delivery, resource, financial or other) that would adversely impact the ability of the Bidder to complete the requirements as given in the RFP.

## Part 4: Annexures

List of annexures:

Annexure No.	Description
<b>Annexure 1</b>	Technical and design specifications
<b>Annexure 2</b>	Process parameters across key systems
<b>Annexure 3</b>	Layouts including key systems
<b>Annexure 4</b>	KPI Definition, formula, and calculation
<b>Annexure 5</b>	Workforce/ Manpower details
<b>Annexure 6</b>	Safety and environmental guidelines
<b>Annexure 7</b>	Letter of bid submission
<b>Annexure 8</b>	Bidders experience and credentials
<b>Annexure 9</b>	Declaration of key personnel
<b>Annexure 10</b>	Revenue and net worth statement
<b>Annexure 11</b>	No blacklisting certificate
<b>Annexure 12</b>	No deviation certificate
<b>Annexure 13</b>	Format for power of attorney
<b>Annexure 14</b>	Undertaking regarding genuines of documents
<b>Annexure 15</b>	Undertaking of indemnity
<b>Annexure 16</b>	Indicative format of Price bid
<b>Annexure 17</b>	Format for Bank Guarantee towards EMD
<b>Annexure 18</b>	Format for Bank Guarantee towards Performance Security
<b>Annexure 19</b>	List of approved banks for EMD, RFP Processing fees, and Performance Security



**Annexure 1: Technical and design specifications**

*(Attached separately)*

**Annexure 2: List of process parameters across key systems**

*(Attached separately)*

**Annexure 3: Layouts including key systems.**

*(Attached separately)*

**Annexure 4: KPI definitions, formula, and calculations**

*(Attached separately)*

**Annexure 5: Workforce/ Manpower details**

*(Attached separately)*

**Annexure 6: Safety and environmental guidelines**

*(Attached separately)*



## Annexure 7: Letter of bid submission

(To be printed on Bidder's letterhead)

Dated:

To,  
General Manager (Power),  
Gujarat Mineral Development Corporation Ltd  
Khanij Bhavan,  
132-Ring Road, Gujarat University Ground, Vastrapur,  
Ahmedabad - 380052

**Subject:** Submission of Bid towards Request for Proposal (RFP) for Comprehensive Operations and Maintenance Partner for GMDC's 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat

Dear Sir/Madam,

We, the undersigned, offer to provide services and spares for [Insert title of assignment] in accordance with your Request for Proposal dated [Insert Date] and our Bid. We are hereby submitting our Bid, which includes this Technical Bid, and a Price Bid, as follows.

1. Physical submission of Technical Bid, RFP Processing Fee, and EMD as per the requirement of the RFP
2. Online submission of Price Bid as per the requirement of the RFP

We are submitting our Bid in individual capacity. We hereby declare that all the information and statements made in this proposal are true and accept that any misinterpretation contained in it may lead to our disqualification.

If discussions are held during the period of validity of the Bid, i.e., before the date indicated in RFP, we undertake to negotiate on the basis of the proposed personnel. Our Bid is binding upon us and subject to the modifications resulting from Contract discussions.

We undertake, if our Bid is accepted, to initiate the services related to the assignment not later than the period specified in the RFP. We understand you are not bound to accept any proposal you receive.

We remain,

Yours sincerely,

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm:

Address:



## Annexure 8: Bidders experience and credentials

### A – Pre-Qualification Criteria

#### 1. Bidder's organization

[Provide here a brief description of the background and organization of your firm/entity. The brief description should include Ownership details, date, and place of incorporation of the firm, objectives of the firm etc. Provide supporting documents such as Certificate of Incorporation, MOA, AOA, GSTIN Registration, which may be applicable etc.]

#### 2. Similar works by Bidder

[Using the format below, provide information on each project for which your firm, was legally contracted either individually as a corporate entity or as one of the major partners within an association, for carrying out job similar to the ones specified in Pre-Qualification Criteria set forth in the RFP (If possible, the Bidder shall specify exact job for which experience details may be submitted)]

Parameter	Response
Name of work	
Description of work including location	
Value of the Contract (in INR)	
Duration of the work (in months)	
Start date (month and year)	
End date (month and year)	

(Similar works include O&M of entire coal or lignite based thermal power Plant as part of a single Contract / Agreement / Work Order (piece-wise contracts awarded from a single client with the same period to be considered as one contract) for a thermal power Plant (single plant should not be less than 100 MW) The Bidder must provide document evidence including relevant portions of the work order / Contract / completion certificate for contracts undertaken.

### B – Technical Criteria

#### 1. Experience in comprehensive O&M services for coal or lignite based thermal power Plants.

[Using the format below, provide information on each work for which your firm, was legally contracted either individually as a corporate entity or as one of the major partners within an association, as per the Technical Criteria set forth in the RFP]

Parameter	Response
Name of work	
Description of the work including location	
Capacity of Contract (in MW)	



**Comprehensive Operations and Maintenance  
Partner for GMDC's 250 (2x125) MW Akrimota  
Thermal Power Station (ATPS), Gujarat**



Value of the Contract (in INR)	
Make of the Boiler	
Number of employees engaged (including sub-contracted workforce)	
Duration of the work (in months)	
Start date (month and year)	
End date (month and year)	

The Bidder must provide document evidence including relevant portions of the work order / Contract / completion certificate for contracts undertaken.



## Annexure 9: Declaration of key personnel

A) Format of Curriculum Vitae (to be provided by all the Key Personnel as mentioned in Annexure 5)

1. Name of the Personnel: \_\_\_\_\_
2. Proposed Position for the Project: \_\_\_\_\_
3. Date of Birth: \_\_\_\_\_
4. Nationality: \_\_\_\_\_
5. Education Qualifications: \_\_\_\_\_

School/College	Degree/Certification	Year of Graduation

6. Languages: \_\_\_\_\_
7. Years of experience: \_\_\_\_\_
8. Employment Record: \_\_\_\_\_

Name of the firm	From – To Date	Designation/Position

9. Work(s) Undertaken that illustrates the capabilities to handle the tasks defined in Part 2 of this document.
  - a. Name of the assignment: \_\_\_\_\_
  - b. Year: \_\_\_\_\_
  - c. Location: \_\_\_\_\_
  - d. Client: \_\_\_\_\_
  - e. Position(s) held: \_\_\_\_\_
  - f. Key activities performed: \_\_\_\_\_
10. Any Relevant Certifications: \_\_\_\_\_

*Note: Kindly submit any other copies of CV (if needed) and appropriate certifications with this sheet. Additional sheets may be used to provide any additional information.*

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm:

Address:



- B) Format of Curriculum Vitae (to be provided for all operations and maintenance heads/ leads that have worked for your firm or are working in your firm for technical score calculation)

	Name of Personnel	Position of responsibility undertaken	Area of expertise	Years of experience (Work done, Prev. projects)	Education (College, degree, graduation year)	Date of Birth
1						
2						
3						
4						
5						
6						
7						
8						
9						

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm:

Address:



## Annexure 10: Revenue and net worth statement

(To be printed on Statutory Auditor's/ Registered Chartered Accountant's letterhead)

I hereby declare that I have scrutinized and audited the financial statement of M/s. \_\_\_\_\_ . Following is the audited revenue for the last three years, net worth and working capital for the last year.

Years	Revenue (INR Cr)
2020-2021	
2021-2022	
2022-2023	

Years	Net worth (INR Cr)
As on 31 <sup>st</sup> March 2023	



## Annexure 11: No blacklisting certificate

(To be printed on stamp paper of value INR 300)

### Format for Affidavit certifying that the Entity/Promoter/s / Director/s of Bidder are not blacklisted

#### No-Blacklisting Affidavit

I M/s. \_\_\_\_\_ (Name of the Bidder), (the names and addresses of the registered office) hereby certify and confirm that we or any of our promoter/s / director/s are not barred by Government of Gujarat (GoG) / any other entity of GoG or blacklisted by any state government or central government / department / Local Government / agency in India or from abroad from participating in Project/s, either individually or as member of a Consortium as on the \_\_\_\_\_ (Bid submission date).

We further confirm that we are aware that our Bid for the captioned Project would be liable for rejection in case any material misrepresentation is made or discovered with regard to the requirements of this RFP at any stage of the Bidding Process or thereafter during the agreement period.

Dated this \_\_\_\_\_ Day of \_\_\_\_\_, 2024.

Name of the Bidder:

Signature of the Authorized person:

Name of the Authorized person:



## Annexure 12: No deviation certificate

(To be printed on Bidder's letterhead)

Dated:

To,  
General Manager (Power),  
Gujarat Mineral Development Corporation Ltd  
Khanij Bhavan,  
132-Ring Road, Gujarat University Ground, Vastrapur,  
Ahmedabad - 380052

**Subject:** No deviation certificate regarding Bid for Request for Proposal (RFP) for Comprehensive Operations and Maintenance Partner GMDC's 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat

Dear Sir/Madam,

We \_\_\_\_\_ (Name of the Bidder), confirm our acceptance to all terms and conditions mentioned in the RFP document, and all subsequent clarifications, in totality and withdraw all deviations raised by us, if any.

We remain,

Yours sincerely,

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm:

Address:



### Annexure 13: Format for power of attorney

(On stamp paper of value INR 300)

KNOW ALL MEN by these presents that we, \_\_\_\_\_ [name of the firm], a FIRM incorporated under the and having its Registered Office/ office at \_\_\_\_\_ [Address of the Company] (hereinafter referred to as “Company/firm”):

WHEREAS in response to the RFP for \_\_\_\_\_ [Name of the Assignment] (“Project”), the Company/ firm is submitting Bid Comprising Technical Bid physically while Price Bid through online submission for the project and GMDC and is desirous of appointing an attorney for the purpose thereof.

WHEREAS the Company deems it expedient to appoint Mr. \_\_\_\_\_ son / daughter of \_\_\_\_\_ resident of \_\_\_\_\_, holding the post of \_\_\_\_\_ as the Attorney of the Company/firm.

NOW KNOW WE ALL BY THESE PRESENTS, THAT \_\_\_\_\_ [name of the company/firm] do hereby nominate, constitute and appoint \_\_\_\_\_ [name & designation of the person] as its true and lawful Attorney of the Company/ firm to do and execute all or any of the following acts, deeds and things for the Company/ firm in its name and on its behalf, that is to say:

To act as the Company’s/firm’s official representative for submitting the Bid Comprising Technical Bid and Price Bid for the said project and other relevant documents in connection therewith.

To sign all the necessary documents, papers, testimonials, applications, representations and correspondence necessary and proper for the purpose aforesaid.

To RFP documents, receive and make inquiries, make the necessary corrections and clarifications to the Proposal and other documents, as may be necessary.

To do all such acts, deeds, and things in the name and on behalf of the Company as necessary for the purpose aforesaid.

<p>The common seal of [name of the company/firm] was here unto affixed pursuant to a resolution passed at the meeting of Committee of Directors held on ____ Day of, 2024 in the presence of [name &amp; designation of the person] and countersigned by [name&amp; designation of the person] of the Company/firm of [name of the company]</p>	<p>_____ [name &amp; designation of the person]</p> <p>_____ [name &amp; designation of the person]</p>
---	---



## Annexure 14: Undertaking regarding genuines of documents.

(On stamp paper of value INR 300)

I/We, \_\_\_\_\_, Partner / Director / Legal  
Attorney / Accredited Representative of M/s. \_\_\_\_\_ solemnly  
declare that:

1. I/We are submitting Tender for the work \_\_\_\_\_  
\_\_\_\_\_ against Tender No. \_\_\_\_\_
2. None of the Partners/Directors of our firm/GMDC is relative of employee of GMDC.
3. All information furnished by us in respect of fulfillment of eligibility criteria and qualification information of this Tender is complete, correct, and true.
4. All documents/credentials submitted along with this Tender are genuine, authentic, true, and valid.
5. If it is found at any point of time that our documents are not genuine then in that case our tender will be rejected, earnest money deposited by us will be forfeited and we will be debarred from participating in further/future GMDC tenders and/or any action as deemed fit by GMDC may be taken against us, including termination of the contract, forfeiture of all dues including Earnest Money / Security deposit and banning/delisting of our entity and all related persons etc.

Dated this \_\_\_\_\_ day of 2024.

Signature

(Company Seal)

In the capacity of duly authorized to sign Bids for and on behalf of:

Signed by

Authorized Signatory with designation



## Annexure 15: Undertaking of indemnity

(To be printed on Bidder's letterhead)

Dated:

To,  
General Manager (Power),  
Gujarat Mineral Development Corporation Ltd  
Khanij Bhavan,  
132-Ring Road, Gujarat University Ground, Vastrapur,  
Ahmedabad - 380052

Dear Sir/Madam,

We M/s. \_\_\_\_\_ hereby undertake that, we shall at all times, indemnify and keep indemnified that GMDC Limited from any and all liability for damages resulting from or arising out of or in any way connected with the operations covered by the Tender No. \_\_\_\_\_. We shall be responsible for all risk arising in connection with or on account of the operations covered by the contract covered by the above tender and shall make good all losses and damages arising there from. In case, the GMDC Limited shall incur any cost or expense or suffer any loss on account of any claim demand or course of action brought against us and arising out of the operations covered by the Bidder/tender, the GMDC Limited shall have the power (without being bound to do so) to define, contest or compromise any such claim demand or cause of action. Any amount that may become payable by GMDC Limited and any cost expense etc. that may be incurred by the GMDC Limited in this behalf, shall also be recoverable from us, without prejudice to your other rights.

We remain,

Yours sincerely,

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm:

Address:



## Annexure 16: Indicative format of Price bid

(This is indicative format for Bidder's reference only. The PRICE PROPOSAL SHOULD BE SUBMITTED ONLINE ONLY at designated places through <https://gmdctender.nprocure.com/>. Price Bid should not be submitted in hard copy and or placed with Technical Bid. Prices submitted in hard copy and or placed with Technical Bid shall result in outright rejection of Bid)

Dated:

To,

General Manager (Power),  
Gujarat Mineral Development Corporation Ltd  
Khanij Bhavan,  
132-Ring Road, Gujarat University Ground, Vastrapur,  
Ahmedabad - 380052

**Subject:** Price Bid for Request for Proposal (RFP) for Comprehensive Operations and Maintenance Partner for GMDC's 250 (2x125) MW Akrimota Thermal Power Station (ATPS), Gujarat

Dear Sir,

After thoroughly reading and accepting the RFP terms, understanding the requirements, and scope of work under this RFP, and its terms and conditions, we hereby agree to provide our services at the following rates:

Description		Total Amount (in INR, excl. GST)
Lumpsum O&M charges for 1 <sup>st</sup> Year	A	

Description		%
Annual Escalation Rate applicable for remaining years	B	

Note:

The Bidder to quote charges inclusive of all other taxes except applicable GST. Applicable GST, over and above approved Lumpsum Charges for Operations and Maintenance Package, at the time of invoicing shall be reimbursed by GMDC. The risk of applicability of any taxes, duties, and levies except GST, shall rest with the Bidder.

Annual escalation rate quoted by the bidder for the remaining years will be applicable on the lumpsum O&M charges for 1st Year (A) as per the following methodology:

$$C = \text{Lumpsum O\&M charges for 2nd Year} = A * (1+B\%)$$



$D = \text{Lumpsum O\&M charges for 3rd Year} = C * (1+B\%)$

$\text{Lumpsum charges for 3 years} = A + C + D$

GMDC 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.

Each Bidder must quote their rates after through reading of this RFP document and estimates of its cost through detailed due diligence of the Plant, statutory laws/regulations. GMDC reserves right to seek any clarifications regarding price quoted from Bidders before any decisions.



**Annexure 17: Format for Bank Guarantee towards EMD**

Please note the following details for Compulsory e-confirmation for Bank Guarantee through ICICI Bank through SFMS under our:

Gujarat Mineral Development Corporation Limited (GMDC)  
132 Ft Ring Road, Near University Ground Vastrapur, Ahmedabad.  
Bank Name: ICICI Bank Ltd  
IFS Code: ICIC0000024  
UIC GMDC530265584 for Field 7037 MT760

(On Non-judicial Stamp paper to be submitted along with submission of bids)

..... (Name of the Bank)  
Address.....  
Guarantee No.....  
A/C Messrs..... (Name of Bidder)  
Date of Expiry.....  
Limit to liability (currency & amount) .....  
Invitation for RFP No..... Dated..... (Bidding document)  
For..... (Name of Facilities)

**Subject:** Earnest Money Deposit Bank Guarantee.

Date.....2024

To,  
Gujarat Mineral Development Corporation Ltd.  
132 Ft Ring Road,  
Near University Ground  
Vastrapur,  
Ahmedabad.

Dear Sir,

In consideration of Gujarat Mineral Development Corporation (hereinafter called "GMDC") which expression shall unless repugnant to the subject of context include his successors and assigns having agreed to exempt M/s..... (herein after called "Bidder") from demand under the terms and conditions of "Technical Bid Document" (hereinafter called the said "Bidding Document") issued by the GMDC vide RFP No.\_\_\_\_\_ for the work\_\_\_\_\_

(Name of the facilities) from Earnest Money Deposit (EMD) of Bid for the due fulfillment by the Bidder of the terms and conditions contained in the said Bidding Document on production of Bank



Guarantee for INR \_\_\_\_\_ ( \_\_\_\_\_ only) (figure in words).

1. We the \_\_\_\_\_ (Name of Bank) hereinafter referred to as "Bank" having our registered office at \_\_\_\_\_ (address of Bank) do hereby undertake and agree to indemnify and keep indemnified GMDC to extent of INR \_\_\_\_\_ ( \_\_\_\_\_ only) (figures in words) against any losses, damage cost, charges and expenses caused to or suffered by or that may be caused or suffered by GMDC by reason of any breach or breaches by the Bidder of any of the terms and conditions contained in the said Bidding Document and unconditionally pay the amount claimed by GMDC on demand and without demur to the extent aforesaid.
2. We \_\_\_\_\_ (Name of Bank) do hereby undertake to pay the amounts due and payable under the guarantee without any demur merely on a demand by you stating that the amount claimed is due by way of loss or damage caused to or would be caused or suffered by you by reason of any breach by the said Bidder of any of the terms or conditions contained in the said Bidding Document by reason of the Bidder's failure to fulfill the conditions of said Bidding Document. Any such demand on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding INR \_\_\_\_\_.
3. We \_\_\_\_\_ (Name of Bank) further agree that GMDC shall be the sole judge of and as to whether the Bidder has committed any breach or breaches of terms and conditions of the said Bidding Document and the extent of loss, damages, costs, charges and expenses caused to or suffered by or that may cause to or suffered by GMDC on account hereof to the extent of the Bid Security required to be deposited by the Bidder in respect of the said document and the decision of GMDC that the Bidder has committed such breach or breaches and as to the amount or amounts of loss, damages, costs, charges, and expenses caused to or suffered by or that may be caused to or suffered by GMDC shall be final and binding on us.
4. We \_\_\_\_\_ (Name of Bank) further agree that guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance on the said Bidding Document and that it shall continue to be enforceable till you certify that terms and conditions of the said Bidding Document have been fully and properly carried out by the said Bidder and accordingly discharge the guarantee. Unless a demand or claim under this guaranteed is made on us in writing on or before the (date) \_\_\_\_\_ we shall be discharged from all liability under this guarantee.
5. We \_\_\_\_\_ (Name of Bank) further agree with you that you have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Bidding Document or to extend time of performance by the said Bidder from time to time or to postpone for any time or from time to time any of the powers exercisable by you against the said Bidder and to forbear or enforce any of the terms and conditions relating to the said Bidding Document and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Bidder or for any forbearance act or omission on your part or any indulgence by you to the said Bidder or any such matter or thing whatsoever under the law relating to sureties would but for this provision have effect of so relieving us.
6. It shall not be necessary for GMDC to proceed against the Bidder before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank, notwithstanding any security which GMDC may have obtained from the Bidder at this time when proceeding is taken against Bank hereunder be outstanding or unrealized.



7. We \_\_\_\_\_ (Name of Bank) further undertake to unconditionally pay the amount claimed by GMDC merely on demand and without demur to the extent aforesaid.
8. We, the said Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of GMDC in writing.
9. This Guarantee will not be discharged due to the change in the constitution of the Bank or the said Bidder.
10. The Bank has under its constitution power to give this guarantee and Mr. \_\_\_\_\_ who has signed it on behalf of the Bank have authority to do so.

Yours faithfully

For.....  
(Name of the Bank)

Notwithstanding anything contained hereinabove

- (I) Our liability under this Bank Guarantee shall not exceed **Rs \_\_\_\_\_/- (Rupees \_\_\_\_\_ only)**
- (II) This Bank Guarantee is valid up to \_\_\_\_\_ (Date).
- (III) We are liable to pay the guaranteed amount or any part thereof under this bank Guarantee only and only if you serve upon us a written claim or a demand on or before \_\_\_\_\_ (date).
- (IV) This bank guarantee is operative only when accompanied with SFMS advice from us.

Yours faithfully

For \_\_\_\_\_  
(Name of the Bank)

**Yours faithfully**

**For.....**  
**(Name of the Bank)**



## Annexure 18: Format for Bank Guarantee towards Performance Security

Please note the following details for Compulsory e-confirmation for Bank Guarantee through ICICI Bank through SFMS under our:

Gujarat Mineral Development Corporation Limited (GMDC)  
132 Ft Ring Road, Near University Ground Vastrapur, Ahmedabad.  
Bank Name: ICICI Bank Ltd  
IFS Code: ICIC0000024  
UIC GMDC530265584 for Field 7037 MT760

Name of the Bank :  
Address :  
Guarantee No :  
Name of the Bidder : M/s \_\_\_\_\_  
Date of Expiry :  
Limit to liability : Rs \_\_\_\_\_/- (Rupees \_\_\_\_\_ only)

Ref: RFP bearing No. \_\_\_\_\_

**Subject: Bank Guarantee towards Security Deposit.**

Date.....2024

To,  
Gujarat Mineral Development Corporation Ltd.  
132 Ft Ring Road,  
Near University Ground  
Vastrapur,  
Ahmedabad.

Dear Sir,

In consideration of Gujarat Mineral Development GMDC (hereinafter called "GMDC") which expression shall unless repugnant to the subject of context include his successors and assigns having agreed to exempt **M/s** \_\_\_\_\_ (hereinafter called "Bidder") from demand under the terms and conditions of "Technical Bid Document" (hereinafter called the said "Bidding Document") issued by the GMDC vide RFP \_\_\_\_\_ . **The present** Bank Guarantee is towards Security Deposit (SD) of Bid in terms of Clause No. \_\_\_\_\_ of Chapter – \_\_\_\_\_ of the afore-said bidding document for the due fulfillment by the Bidder of the terms and conditions contained in the said Bidding Document on production of Bank Guarantee for **Rs** \_\_\_\_\_/- (**Rupees** \_\_\_\_\_ **only**)

1. We the \_\_\_\_\_ (Name of the Bank) hereinafter referred to as “Bank” having our registered office at \_\_\_\_\_ do hereby undertake and agree to indemnify and keep indemnified GMDC to extent of **Rs \_\_\_\_\_/- (Rupees \_\_\_\_\_ only)** against any losses, damage cost, charges and expenses caused to or suffered by or that may be caused or suffered by GMDC by reason of any breach or breaches by the Bidder of any of the terms and conditions contained in the said Bidding Document and unconditionally pay the amount claimed by GMDC on demand and without demur to the extent aforesaid.
2. We \_\_\_\_\_ (Name of the Bank) do hereby undertake to pay the amounts due and payable under the guarantee without any demur merely on a demand by you stating that the amount claimed is due by way of loss or damage caused to or would be caused or suffered by you by reason of any breach by the said Bidder of any of the terms or conditions contained in the said Bidding Document by reason of the Bidder's failure to perform according to the terms and conditions of said Bidding Document. Any such demand on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding **Rs \_\_\_\_\_/- (Rupees \_\_\_\_\_ only)**.
3. We \_\_\_\_\_ (Name of the Bank) further agree that GMDC shall be the sole judge of and as to whether the Bidder has committed any breach or breaches of terms and conditions of the said Bidding Document and the extent of loss, damages, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by GMDC on account hereof to the extent of the Bid Security required to be deposited by the Bidder in respect of the said document and the decision of GMDC that the Bidder has committed such breach or breaches and as to the amount or amounts of loss, damages, costs, charges, and expenses caused to or suffered by or that may be caused to or suffered by GMDC shall be final and binding on us.
4. We \_\_\_\_\_ (Name of the Bank) undertake to pay to the GMDC any money so demanded notwithstanding any dispute or disputes raised by the said Bidder (s) in any suit or proceeding pending before any forum of law relating thereto our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the said Bidder (s) shall have no claim against us for making such payment.
5. We \_\_\_\_\_ (Name of the Bank) further agree that guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance on the said Bidding Document and that it shall continue to be enforceable till you certify that terms and conditions of the said Bidding Document have been fully and properly carried out by the said Bidder and accordingly discharge the guarantee. Unless a demand or claim under this guaranteed is made on us in writing on or before the (date) \_\_\_\_\_ we shall be discharged from all liability under this guarantee thereafter.
6. We \_\_\_\_\_ (Name of the Bank) further agree with you that you have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Bidding Document or to extend time of performance by the said Bidder from time to time or to postpone for any time or from time to time any of the powers exercisable by you against the said Bidder and to forbear or enforce any of the terms and conditions relating to the said Bidding Document and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Bidder or for any forbearance act or omission on your part or any indulgence by you to the said Bidder or any such matter or thing whatsoever under the law relating to sureties would but for this provision have effect of so relieving us. The Bank further agrees that in case this guarantee is required for a longer period, the bank may extend the same.



- 7. We \_\_\_\_\_ (Name of the Bank) further undertake to unconditionally pay the amount claimed by GMDC merely on demand and without demur to the extent aforesaid.
- 8. We, the said Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of GMDC in writing.
- 9. This Guarantee will not be discharged due to the change in the constitution of the Bank or the said Bidder.
- 10. The Bank has under its constitution power to give this guarantee and Mr. \_\_\_\_\_ who has signed it on behalf of the Bank have authority to do so.

Yours faithfully

For.....

(Name of the Bank)

Notwithstanding anything contained hereinabove

- (I) Our liability under this Bank Guarantee shall not exceed **Rs \_\_\_\_\_/- (Rupees \_\_\_\_\_ only)**
- (II) This Bank Guarantee is valid up to \_\_\_\_\_ (Date).
- (III) We are liable to pay the guarantee amount or any part thereof under this bank Guarantee only and only if you serve upon us a written claim or a demand on or before \_\_\_\_\_ (date).
- (IV) This bank guarantee is operative only when accompanied with SFMS advice from us.

Yours faithfully

For \_\_\_\_\_

(Name of the Bank)



## Annexure 19: List of approved banks for EMD, RFP Processing fees and Performance Security

The following list of banks can get updated from time to time as per the latest notice provided by the Government of Gujarat. The Bidder can provide EMD / RFP Processing Fee / Performance Security from any of the approved banks by the Government of Gujarat in the latest notice, except for the co-operative banks.

Acceptance of Bank Guarantee as  
Security Deposit and Earnest  
Money Deposit.

### Government of Gujarat

#### Finance Department

GR. No.: FD/MSM/e-file/4/2023/0057/D.M.O.

Date: 21/04/2023

Read: FD GR. No.: EMD/4/2022/0002/DMO Dt. 20/05/2022

#### Preamble:

Tendering authorities of the State Government and its Boards/Corporations/PSUs frequently take Bank Guarantee from the bidders towards Security Deposit and Earnest Money Deposit. The State Government had issued the list of eligible banks vide above read resolutions of this department dated 20/05/2022.

After careful consideration, the Government has decided to approve the list of Banks whose Bank Guarantees would be accepted for the purpose mentioned above. It has now been decided to resolve as follows:

#### Resolution:

Government Departments and State Government Boards / Corporations / PSUs would accept Bank Guarantee (towards Security Deposit and Earnest Money Deposit) issued by any of the banks included in the **Annexure I**, attached to this Resolution.

The tendering authority will be required to ascertain the authenticity of the Bank Guarantee and set up necessary internal control procedures.

By order and in the name of the Governor of Gujarat.

(S. Chhakehuak)

Additional Secretary (Budget)  
Finance Department



**To,**  
The Secretary to His Excellency Governor of Gujarat, Raj Bhavan, Gandhinagar  
Principal Secretary to Hon. Chief Minister  
PS to Hon. Finance Minister  
PS to all Hon. Ministers, State Ministers and Deputy Ministers  
PS to Chief Secretary  
PS to Principal Secretary, Finance Department  
PS to Secretary (EA), Finance Department  
PS to Secretary (Expenditure), Finance Department  
PS to Additional Secretary (B), Finance Department  
All Administrative Departments, Sachivalaya, Gandhinagar  
System Manager, Finance Department for put up on GSWAN website  
Select File DMO-Finance Department

**Annexure I.**

**Finance Department, GR. No.: FD/MSM/e-file/4/2023/0057/D.M.O.**

Date: 21/04/2023

(A) Guarantees issued by the following banks will be accepted as SD/EMD on permanent basis:

❖ **All Nationalized Banks**

(B) Guarantees issued by the following Banks will be accepted as SD/EMD for the period up to March 31, 2024. The validity cut-off date in the GR is with respect to the date of issue of Bank Guarantee irrespective of the date of termination of Bank Guarantee.

Sr No	Name of Banks	Sr No	Name of Banks
1	AXIS Bank	17	Kotak Mahindra Bank
2	AU Small Finance Bank	18	South Indian Bank
3	Bandhan Bank	19	Standard Chartered Bank
4	BNP Paribas	20	Tamilnadu Mercantile Bank
5	City Union Bank	21	Utkarsh Small Finance Bank
6	CSB Bank	22	The Kalupur Commercial Co-op. Bank
7	DBS Bank India Limited	23	Ahmedabad Mercantile Co-op. Bank
8	DCB Bank	24	Nutan Nagarik Sahakari Bank Ltd.
9	Equitas Small Finance Bank	25	Rajkot Nagarik Sahakari Bank Ltd.
10	FEDERAL Bank	26	Saraswat Co-Operative Bank Ltd
11	HDFC Bank	27	SVC Co-Operative Bank LTD.
12	HSBC Bank	28	The Gujarat State Co-operative Bank
13	ICICI Bank	29	The Mehsana Urban Co-Op. Bank Ltd
14	IndusInd Bank	30	The Surat District Co-Operative Bank Ltd
15	Karnataka Bank	31	The Surat People's Co-Op. Bank Ltd
16	Karur Vysya Bank	32	Saurashtra Gramin Bank

All the eligible banks are instructed to collect the original documents/papers of guarantee from the concerned tendering authority.

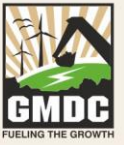


(S. Chhakchhuak)

Additional Secretary (Budget)

Finance Department

-----XXXXX-----




SESHAASAI (M) - 015 - 2010


28/12/12

Pay

Rupees

Ac No. 002405019379

  
 ICICI Bank  
 Ahmedabad Branch  
 Jmc House, Opp. Parimal Garden, Ahmedabad - 380006  
 RTGS / NEFT / FSC Code : ICIC0000024

  
 Rivilege  
 SIGNATURE

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 BUSINESS BANKING - NEW CURRENT ACCOUNT  
 Payable at par at all branches of ICICI Bank Limited in India

FOR GUJARAT MINERAL DEVE CORP LTD  
 ₹

VALID FOR THREE MONTHS ONLY  
 D D M M Y Y Y Y  
 OR ORDER

AUTHORIZED SIGNATORIES  
 Please sign above

491099 380229002 019379 29

# ANNEXURE 1: Technical/ Design Specifications

## PART A: Boiler, ESP, and Auxiliaries

<b>Equipment</b>	<b>Boiler</b>
Make	Alstom Energy Systems GmbH (later acquired by GE)
Type of Boiler	CFBC boiler - 405 TPH
Reg. No.	GT-4878 and GT- 5040
Pressure	159 barg
Temperature	538°C
Heating surface area	23044 m2
Pressure component	SH1, SH2, SH3, SH4, SH5, RH1, RH2, Economizer, Water wall tubes and header
Furnace size in meters	12.9 x 8.0mtr
1st Pass	Water wall, SH4(23.5 mtr from 0 mtr), RH2(28.5 mtr from 0 Mtr)
2nd Pass	SH1, SH2, SH3, SH5, RH1, Economiser
Drum Details	MOC- BS-EN-10028-2-1993 Gr. NC 271, Dia-1372 mm, Thickness-68 mm
<b>Equipment Name:</b>	<b>Furnace</b>
Type:	CFBC
Material to be handled:	Lignite
Make:	Alstom Energy Systems GmbH (later acquired by GE)
Combustion chamber volume:	3674 cubic meter
Design Standard:	IBR/ISO ASME material
<b>Equipment Name:</b>	<b>Boiler Drum</b>
Specification of material:	SA-299
Elevation of drum:	51 M
Overall length:	13000 mm
Thickness of the shell:	110 mm
<b>Equipment Name:</b>	<b>Superheater</b>
Make:	Alstom Energy Systems GmbH (later acquired by GE)
Number of stages:	5
Specification of material:	SA-210/SA-209/SA-213
Type of flow:	SH4, RH2- Parallel SH3, SH5, RH1 - Counter

Number and type of thermocouples fitted to superheater tubes	60 Nos type-K thermocouples on SH tubes near headers
<b>Equipment Name:</b>	<b>Reheater</b>
Make:	Alstom Energy Systems GmbH (later acquired by GE)
Number of stages:	2
Specification of material Type of flow (counter or parallel)	RH1 Counter SA-209 RH2 Parallel SA-213
<b>Equipment Name:</b>	<b>TAPH</b>
Type:	Tubular
Manufacturer:	ABB-ABL
Number of air heaters per boiler	1 (primary + secondary)
Number of tubes:	4992
Number of blocks	3 primary + 3 secondary per TAPH
<b>Equipment Name:</b>	<b>PA fan</b>
Type:	Backward Curve Aero foil
Manufacturer:	Andrew Yule & Co.
Size and model:	2350 MM DIBAB-11
Shaft power:	1040 KW
Rated speed:	1490 RPM
Shaft diameter at bearing:	127 MM
Shaft diameter at impeller:	315 MM
Material:	EN 8
Bearing type:	Journal size – 5”
<b>Equipment Name:</b>	<b>SA fan</b>
Type:	Backward Curve Aero foil
Manufacturer:	Andrew Yule & Co.
Size and model:	2030 MM DIBAB-11
Shaft power:	742 KW
Rated speed:	1490 RPM
Shaft diameter at bearing:	114 MM
Shaft diameter at impeller:	290 MM
Material:	EN 8
Bearing type:	Journal size – 4”

<b>Equipment Name:</b>	<b>ID fan</b>
Type:	Backward Curve Laminar
Manufacturer:	Andrew Yule & Co.
Size and model:	2990 MM DIBCB-42
Shaft power:	718 KW
Rated speed:	710 RPM
Shaft diameter at bearing:	190.5 MM
Shaft diameter at impeller:	405 MM
Material:	EN 8
Bearing type:	Journal size – 190.5
<b>Equipment Name:</b>	<b>FA fan</b>
Make:	RKR Verdichttechnik GmbH
Model:	K-145-R-LP
Capacity:	100 M3/Min
Power:	129.1 KW
RPM:	1360
<b>Equipment Name:</b>	<b>Ash Cooler Fan</b>
Type:	Backward Curve Laminar
Make:	Andrew Yule & Co.
Size and model:	1270 MM SIPSC-05
Shaft power:	120 KW
Rated speed:	2980 RPM
Bearing type:	Ball/Roller
Size of Bearing:	100/150 MM
Fan No:	01019
<b>Equipment Name:</b>	<b>Cyclone</b>
Quantity	4
Manufacturer:	Alstom Energy Systems GmbH
Casing	IS:2026
Lining	Fire and insulating brick
Plate thickness	10 mm

<b>Equipment Name:</b>	<b>Gravimetric feeder</b>				
Make:	Stork Equipment Company				
Model No:	LPG30				
Capacity:	127 TPH (Max) and 12.7 TPH (Min)				
Belt drive motor:	14.9 KW (20 HP)				
<b>Equipment Name:</b>	<b>Lignite Draglink</b>				
Make:	Alstom				
Capacity:	11.5 to 115 T/hr.				
Speed:	0.035 m/min				
Dimensions:	HS 1000 II X 12.4 mm				
<b>Equipment Name:</b>	<b>Lime dosing system</b>				
Type:	Drag Link		<-----Rotary----->		Screw
Make	Elecon or Equal <-----Approved make ----->			Elecon or Equal	
Location	Below lime bunkers	Below lime bunkers	Below bag filters	Below lime dust day bins	Below bag filters
Quantity	3	3	3	4	3
Capacity (TPH)	125	125	15	80	15
<b>Equipment Name:</b>	<b>Bed Ash Cooler</b>				
Make:	Alstom				
Inlet temperature:	850 deg				
Outlet temperature:	130 deg (max 230 deg)				
<b>Equipment Name:</b>	<b>Ash draglink</b>				
Make:	Alstom				
Type:	R-01				
Bed ash particle size:	0 to 6 mm				
Sr. No.	02/00188-0201,SMD FORDERTECHNIK GMBH				
<b>Equipment Name:</b>	<b>Ash rotary seal</b>				
Make:	Neha Engineering				
Type and dimensions:	Rotary air lock valve 400X400 mm gate type				
Motor specifications:	1.5KW VFD duty geared motor with mounting flange and zero speech switches				

<b>Equipment Name:</b>	<b>Ash cooler PHE</b>
Make:	Alfa Laval
Type:	AK20FG
Material:	Titanium as per SB265 GR.1
Plate thickness:	0.6 mm
Design Pressure:	13 Kg/cm <sup>2</sup>
Design Temperature:	120 deg
Gasket Material:	ALEPDM(GLUED)
Sr. No.	30106-94-818, DRAWING NO.2822483
<b>Equipment Name:</b>	<b>Lignite Rotary Air Lock Feeder</b>
Make:	Alstom
<b>Equipment Name:</b>	<b>Cyclone Rotary Feeder</b>
Make:	Hyquip Rotolock Pvt. Ltd.
Type:	RAV 5600
Size:	560
Speed:	20 RPM
Gearbox Details:	Power Build Ltd, Type: 73P-D112M4, HP-5, N2 – 30 RPM, AMPS – 7.7A
<b>Equipment Name:</b>	<b>Day Bin Rotary Feeder</b>
Make:	Hyquip Rotolock Pvt. Ltd.
Type:	02.03
Size:	560
Speed:	25 RPM
Gearbox Details:	5 HP/KW, 25 RPM, Sr. No: 75702
<b>Equipment Name:</b>	<b>Weigh Feeder</b>
Make:	Transweigh Inia Ltd.
Type:	TLD 120/1.1 V
Capacity:	140 TPH
Belt Width:	1200 MM
Material:	Limestone

Design specifications of the ESP have been detailed below for 150 mg/Nm<sup>3</sup> particulate matter:

<b>Equipment Name:</b>	<b>ESP</b>
Quantity	2
Manufacturer	Alstom
Number of electrical fields in series	6+1
Number of passes	2
Specific collecting plate voltage	148.74 sq.m/cu.m/sec for 7 fields 127.49 sq.m/cu.m/sec for 6 fields
Model Number	FAA 7*30H-96-150
Maximum bus voltage	70 kV
Average bus voltage	43 kV
Guaranteed power consumption	170 kW for continuously operated equipment
Guaranteed collection efficiency	99.889% with 90.9 g/NM <sup>3</sup> with all fields in operation 99.857% with 90.9 g/NM <sup>3</sup> with one field out of operation
Guaranteed pressure drop across ESP	20 mm wg
Guaranteed air leakage rate	1.01 m <sup>3</sup> /sec
Inlet dust concentration	88 g/nm <sup>3</sup> for performance lignite in normal condition 205 g/nm <sup>3</sup> for worst lignite in normal condition 106 g/nm <sup>3</sup> for performance lignite in soot blowing condition
Outlet dust concentration with one field out of service	130 mg/nm <sup>3</sup> for performance lignite in normal condition 150 mg/nm <sup>3</sup> for worst lignite in normal condition 130 mg/nm <sup>3</sup> for performance lignite in soot blowing condition
Total active collection area	20,160 m <sup>2</sup> for 7 fields

Key design specifications / ideal process parameters associated with the pumps and valves installed across both the units on the boiler side have been detailed below:

Pumps:

<b>Equipment Name:</b>	<b>Boiler Fill Pump</b>
Make:	Sulzer
Sr. No.:	102578-02
Bearing No:	310
<b>Equipment Name:</b>	<b>Hot water Pump</b>
Make:	KSB
Sr. No:	6-917123324/3
Discharge:	205 m <sup>3</sup> /h
Speed:	2800 rpm
<b>Equipment Name:</b>	<b>HP Dosing Pump</b>
Make:	V.K. PUMP INDUSTRIES PVT.LTD.
Type:	Multi Flow pump
Model No:	PR-35
Capacity:	72 L/h

Pressure:	183.5 Kg/cm <sup>2</sup>
Ratio:	5-1
Sr No.:	N02085810
<b>Equipment Name:</b>	<b>LP Dosing Pump</b>
Make:	V.K. PUMP INDUSTRIES PVT.LTD.
Type:	Multi Flow pump
Model No:	PR-10
Capacity:	72 L/h
Pressure:	183.5 Kg/cm <sup>2</sup>
Ratio:	5-1
Sr No.:	N02085811
<b>Equipment Name:</b>	<b>Auxiliary Boiler LP Dosing Pump</b>
Make:	POSITIVE METERING PUMP(I) PVT.LTD.
<b>Equipment Name:</b>	<b>LDO Unloading Pump</b>
Make:	TUSHACO PUMPS PVT.LTD
Type:	TS 105/045.000.40.1K
Sr. No.:	035243 A/0434
Discharge:	250 L/min
Diff Pressure:	3.50 Kg/m <sup>2</sup>
Velocity:	2.50-15.7 mm/sec
Speed:	1415 rpm
Power:	5.50 KW
<b>Equipment Name:</b>	<b>LDO Transfer Pump</b>
Make:	ROTODEL
Model:	RDRX100L
Speed:	1440 rpm
Capacity:	50 Lpm
Discharge Pressure:	10 Kg/cm <sup>2</sup>
<b>Equipment Name:</b>	<b>HFO Unloading Pump</b>
Make:	TUSHACO PUMPS PVT.LTD
Type:	TDSH 088/040.100.40.1BK
Discharge:	417 L/min
Diff Pressure:	3.50 Kg/cm <sup>2</sup>
Velocity:	90-300 mm/sec
Speed:	1450 rpm
Power:	7.50 KW
Net calorific value of heavy oil:	37.78 (Mj/kg)

<b>Equipment Name:</b>	<b>HFO Transfer Pump</b>
Make:	TUSHACO PUMPS PVT.LTD
Model No.:	T3S 70/40 NHSBF S2RNJE BALC
Discharge:	328 L/min
Diff Pressure:	30 Kg/cm <sup>2</sup>
Velocity:	80 mm/sec
Speed:	1480 rpm
Power:	23.1 KW
DRG No:	D001-3922/1
Oil pressure at burner:	16 bar
Oil heating-up temperature from/to	50/130 degree C
<b>Equipment Name:</b>	<b>Lime Screw Conveying Pump</b>
Make:	Alstom
Type:	Screw With Solid Shaft For 235 mm Pneumatic Screw Pump
Capacity:	125 TPH
DRG No.:	B SHE-16612
<b>Equipment Name:</b>	<b>Lime Oil Pre Jacking Pump</b>
Capacity:	6 m <sup>3</sup> /h
Maximum Pressure:	400 Kg/cm <sup>2</sup>
Oil Handled:	ISO VG 46
<b>Equipment Name:</b>	<b>Heavy Oil Service Pumpsets</b>
Type and make:	Screw pump, Delta make
Required oil temperature at pump inlet:	80 deg
Number of pumps for each boiler:	2
Viscosity:	370 mm <sup>2</sup> /s
Pressure at inlet:	1 barg
Pressure at outlet:	30 barg
Operating speed:	1450 rpm
Power requirement:	38 kW
Motor rating:	42 kW
Pump heating:	Electric
<b>Equipment Name:</b>	<b>Phosphate dosing pump</b>
Manufacturer:	V K Pump
Type	Positive displacement
Rated capacity (at full stroke) at rated discharge pressure	60 L/h (approx.)
Rated discharge pressure:	150 Kg/sq cm (approx.)

Valves:

<b>Equipment Name:</b>	<b>Drum Safety Valve</b>
Make:	BHEL
Required Capacity:	121500 Kg/h
Set Pressure:	164.2 Kg/cm <sup>2</sup>
Relieving Temperature:	348.3 deg
Valve Type:	Open Yoke, Spring Loaded, Semi Nozzle and Full Lift
<b>Equipment Name:</b>	<b>Superheater Safety Valve</b>
Make:	BHEL
Required Capacity:	81000 Kg/h
Set Pressure:	148.9 Kg/cm <sup>2</sup>
Relieving Temperature:	540 deg
Valve Type:	Open Yoke, Spring Loaded, Semi Nozzle and Full Lift
<b>Equipment Name:</b>	<b>CRH Safety Valve</b>
Make:	BHEL
Required Capacity:	75600 Kg/h
Set Pressure:	47.9 Kg/cm <sup>2</sup>
Relieving Temperature:	420 deg
Valve Type:	Open Yoke, Spring Loaded, Semi Nozzle and Full Lift
<b>Equipment Name:</b>	<b>HRH Safety Valve</b>
Make:	BHEL
Required Capacity:	56700 Kg/h
Set Pressure:	44.9 Kg/cm <sup>2</sup>
Relieving Temperature:	540 deg
Valve Type:	Open Yoke, Spring Loaded, Semi Nozzle and Full Lift
<b>Equipment Name:</b>	<b>Aux. Steam PRDS Safety Valve</b>
Make:	BHEL
Required Capacity:	40000 Kg/h
Set Pressure:	16.3 Kg/cm <sup>2</sup>
Relieving Temperature:	260 deg
Valve Type:	Open Yoke, Spring Loaded, Semi Nozzle and Full Lift
<b>Equipment Name:</b>	<b>MSSV</b>
Make:	YARWAY / HOPKINSON / CROSBY
Type:	Spring Loaded
<b>Equipment Name:</b>	<b>IBD Control Valve</b>
Make:	Fisher
Size:	200 NB
Type:	Control Valve, Class-300

Type of ends:	B.W
Material of construction:	CCS
<b>Equipment Name:</b>	<b>Soot Blower Steam Isolation Valve</b>
Make:	BHEL
Size:	900 NB
Type:	WG, Class-600
Type of ends:	B.W
Material of construction:	CAS (WC6)

## PART B: Turbine and Generator

Design specifications of the main turbine and generator have been detailed below:

<b>Equipment Name:</b>	Main Turbine
Make:	Ansaldo
Governing type	Electrohydraulic
No of cylinders	2
Number plate Speed	3000 RPM
Number of stages (HP / IP / LP)	Control stage + 22/16/7

<b>Equipment Name:</b>	Generator
Make	Ansaldo WX21Z
Number of phases	3
Type of stator winding connection	Star
Number of parallel paths / phases	2
Line terminals brought out	3
Neutral terminal brought out	3

Key design specifications associated with the transformer have been detailed below:

<b>Equipment Name:</b>	Generator Transformer
Make:	Alstom Energy Systems GmbH (later acquired by GE)
No. of phases:	3 (in both HV and LV)
Type:	Double Wound
Vector Group:	Ynd11
Tank and fitting mass:	42000 Kg
Mass of oil:	47000 Kg
Total mass:	196000 Kg
Sr. No.:	TNDE – 6515-B – 29674
<b>Equipment Name:</b>	Station Transformer
Make:	Areva Ltd.

No. of phases:	3
Rating:	30000 KVA
Vector Group:	Yyn0
Core and winding weight:	29000 Kg
Mass of oil:	26500 Kg
Total mass:	75500 Kg
Sr. No.:	TNDE – T6839/671000111
<b>Equipment Name:</b>	CT
Make:	CGL
Type:	IOSK-245/460/1050
Spec:	IS 2705-92
S.O. No.:	EPDG0628/50
STR:	40KA/3Sec
Rated primary current:	2400 A
Reference Sr. No.:	18625
Core:	6 [Core 1, 2 & 5 PS CI, Core 3& 4 0.2 CL & Core 6 0.5CI]
CT Ratio:	2000-1000-500/1Amp
<b>Equipment Name:</b>	CVT
Make:	CGL
Type:	CVE: 245/1050/50
HSV:	245 KV
Capacitance:	5500+10%-5%pF
Specs:	Pedestal Mounting, Single phase, Oil immersed, Outdoor, Hermetically sealed
Capacitor oil:	60+/-10%kg
Ins. Level:	460KV/1050Kvp
Thermal output:	100 VA

Key design specifications associated with the transformer have been detailed below:

<b>Area:</b>	Switchyard
Switchyard voltage level	220 KV
Bays	Total 8 (4 bays – Transmission lines of 1000A capacity 2 bays – 170 MVA GTs each 1 bay – 30 MVA station transformer 1 bay – Bus coupler)
Bus transfer system	2 systems of 220 KV each
<b>Equipment Name:</b>	Lighting Arrestor
Model	PBC
Creepage distance	31 mm/KV

Type	198KV 20KA rated Station Class Metal Oxide (gapless) Surge Arresters hermetically sealed in a porcelain container having pressure release arrangement at both ends in FRP cag duly molded with silicon porcelain with a line terminal connector for solidly earthed neutral system to be used on a normal system voltage of 220KV for an MCOV of 198KV (RMS) with Insulating base, Surge Monitor, Connecting Lead and Terminal Connector
<b>Equipment Name:</b>	Line breaker
Make	CGL
Type	200-SFM-40A
Reference Sr. No.	16199C
Rating	1600 Amp
Specification	Complete pole unit assembly Without (W/O) housing For, 245KV, 40KA, 1600Amp, SF6 Type GCB

### PART C: DCS System

Key design specifications associated with the DCS system have been detailed below:

S. No.	Area	DCS/ PLC	Make	Model	Application <sup>1</sup>	Mode of communication
1.	CCR	DCS	ABB	SYMPHONYH ARMONY	BOILER / TURBINE	MODBUS (VIBRATION, ACW/CCW/CW PUMP AHP/SWITCH YARD/COMPRESSOR/VATECH/, HARD WIRE)
2.	CCR	DCS	ABB	SYMPHONY MELODY	BOILER PROTECTION, BURNER MANAGEMENT SYSTEM, LIME FEEDING SYSTEM, AUXILLARY PRDS, SOOT BLOWING SYSTEM	CNR10 TO CCR70, HARD WIRE
3.	CCR	PLC	HONEYWELL	FSC	BOILER MANAGEMENT SYSTEM	CNR10 TO CCR71, HARD WIRE
4.	CCR	DCS	ABB	SYMPHONYH ARMONY	TURBINE	MODBUS, HARD WIRE
5.	CCR	PLC	ALLEN BRADELY	SLC 5/04	STEAM CONVEY TO SWTP (PRESENTLY	HARD WIRE, MODBUS

<sup>1</sup> Source: Discussions with ATPS team

S. No.	Area	DCS/ PLC	Make	Model	Application <sup>1</sup>	Mode of communication
					NOT IN SERVICE)	
6.	CCR	PLC	MOLLER	PS4-341 MM1PLC 24 VDC WITH 16DI 3AI/AO	HP/LP BYPASS SYSTEM	HARD WIRE
7.	ACW/ CCW	PLC	ALLEN BRADELY	SLC 04	ACW / CCW PUMP	MODBUS
8.	MHP	PLC	ABB	AC800M	COAL HANDLING PLANT	
9.	SWTP	DCS	SIEMENS	TELEPERM XP	SEA WATER TREATMENT PLANT & AUXILIARY BOILER	
10.	CW PUMP HOUSE	DCS	SIEMENS	TELEPERM XP	CW PUMP HOUSE	MODBUS
11.	AHP	PLC	ALLEN BRADELY	LOGIX 1756		MODBUS
12.	STACKER RECLAIMER	PLC	GE FANUC	CPUE05	STACKER RECLAIMER SYSTEM	
13.	COMPRESSO R	PLC	SCHNEIDER ELECTRIC		SCADA SYSTEM (RIGHT NOW NOT AVAILABLE)	MODBUS

#### PART D: MHP

Key design specifications for lignite handling system have been detailed below:

<b>Equipment Name:</b>	Lignite Apron feeder
Size:	1800mm wide x 13600 mm Long
Machine Sr. No:	6742
TRF reference	SODS-0740/05
Ref. Drg. No.	0-4518-000
Material to be handled:	Lignite
<b>Equipment Name:</b>	Lignite Primary sizer
Model:	MMD 625 series Twin -shaft mineral sizer,625 MM shaft centers
Material to be handled:	Lignite
Feed size:	(-)1200 MM
Product size:	(-)300 MM
Machine serial Number:	S625-0128
Motor:	150 KW,3-Phase, RPM-1500, Volts :415 KV

Make:	MMD (Mining machinery Developments limited)
<b>Equipment Name:</b>	Lignite secondary sizer
Model:	MMD 154 Series twin shaft sizer 500 mm centers
Material to be handled:	Lignite
Feed size:	(-)300 MM
Product size:	(-) 80 MM
Machine serial Number:	S154-0819
Motor:	150 KW,3-Phase, RPM-1500, Volts :415 KV
Make:	MMD (Mining machinery Developments limited)
<b>Equipment name:</b>	Lignite Impactor
Model:	1220/28 Reversible Impactor
Material to be handled:	Lignite
Feed size:	(-)80MM
Product size:	(-)6MM
Capacity:	700TPH
Motor:	1100KW,3-Phase, RPM-1500, Volts :6.6 KV
Make:	M/s. TRF
<b>Equipment name:</b>	Lignite screen (Bivitec screening Machines)
Model:	KRL/ED 2400X8 R-45
Machine serial Number:	SbT 0676
Make:	Binder+Co AG Gleisdorf, Austria-8200
Material to be handled:	Lignite
<b>Equipment Name:</b>	Stacker Reclaimer for reversible yard conveyor
Model:	Rail mounted slewing boom type stacker cum bucket wheel reclaimer with tripper.
TPH capacity:	300 MT reclaiming/600 MT stacking
Make:	TRF
Material to be handled:	Lignite
<b>Equipment name:</b>	Ultraflow feeder TUF-11
Size:	2400x3000x400 deep TUF11
Machine Sr. No:	6707
TRF reference:	SODS 0740/07
Reference drg. No:	1-3952-000
Material to be handled:	Lignite
<b>Equipment name:</b>	Shuttle conveyor
Size:	1200 mm width /Reversible
TRF reference:	IODS No :0740/03

Reference drg. No:	0-2514-000
Material to be handled:	Lignite
<b>Equipment Name:</b>	Unbalance motor feeder
Size:	2000x2500
TRF reference:	SODS-0740/07
Reference drg. No:	1-3953-000
Material to be handled:	Lignite
<b>Equipment Name:</b>	Mobile tripper
Size:	1000 MM (Motorized) Lignite
TRF reference:	IODS 0740/06
Reference drg. No:	1-7920-000
Material to be handled:	Lignite
<b>Equipment name:</b>	Dry fog system
Make:	TPS manufacturing & construction co. PVT. Ltd.
<b>Equipment name:</b>	Dust suppression system
Make:	Spraying systems (India) PVT LTD. Bangalore
<b>Equipment Name:</b>	Slew bearing in stacker and reclaimer
Make:	Rothe Erde
Capacity:	Stacking 600 TPH & Reclaiming 300 TPH
Application:	Rail mounted slewing boom type stacker cum bucket wheel reclaimer
Part list No:	4002017A
Drawing No:	190.25.2794.000.41.1502
Type:	3-row roller
Weight	1779 Kg

Key design specifications for ash handling system have been detailed below:

<b>Equipment Name:</b>	Air Compressor
Model	EL07335, MAKE: ELGI - 25 SERIES
Fab. No	25191
Motor	275Kw,6.6KV
Capacity	41.7 M <sup>3</sup> /MIN
Rated pressure	7 KG/CM <sup>2</sup>
Make	ELGI
<b>Equipment Name:</b>	Air Dryer
Dryer capacity	6250 M <sup>3</sup> /Hr.

Inlet pressure	7.0 KG/cm2
Inlet temperature (Max)	45 Deg. C
Outlet dew point at line Pr.	(-) 20 Deg. C
Purge loss	NIL
Supply voltage	415 V, 3 Ph.,50Hz.
Operation	Automatic
Base frame size	2200 mm x 1400 mm
Hight from Base	2800 mm (Approx.)
Refrigerant	R-22
Make	Mellcon Engineers PVT Ltd, New Delhi
<b>Equipment Name:</b>	Rotary Ash Conditioner
Type	Rotary Drum type
Capacity	160 TPH
Drg. No	1-025-SD-2-019, Rev-1
Make	McNally Bharat
<b>Equipment name:</b>	Vibrating screen
Type	Single deck vibrating screen
Equipment Sr. No	2004-I-1
Separation size	(-) 2MM
capacity	12.5 TPH
Screen size	1000 MM x 3000 MM
frequency of Vibration	1350 RPM(Normal)
Amplitude of vibration	2 MM
Material to be handled	Bed ash
Feed size	(-)3 MM
Bulk density	1.2 T/M <sup>3</sup>
Screen Inclination	15 Drg.
Screen type	Circular motion
Screen Aperture (MM)	2x2
Tensioning Arrangement	Cross wise
Make	McNally Bharat
<b>Equipment name:</b>	Vibrating screen
Type	Single deck vibrating screen
Equipment Sr. No.	2004-I-3
Separation size	(-) 2MM
capacity	25 TPH
Screen size	1500 MM x 3000 MM
frequency of Vibration	1350 RPM(Normal)
Amplitude of vibration	2 MM
Material to be handled	Bed ash

Feed size	(-)3 MM
Bulk density	1.2 T/M <sup>3</sup>
Screen Inclination	15 Drg.
Screen type	Circular motion
Screen Aperture (MM)	2x2
Tensioning Arrangement	Cross wise
Make	McNally Bharat
<b>Equipment Name:</b>	Dust conditioning water Pump
Type	CPC 80/400
Size	125 x 80
Head	45 m
Capacity	70 M <sup>3</sup> /Hr
Motor Power	18.5 KW/4P
Speed	1450 RPM
Make	Sam turbo industry limited
<b>Equipment name:</b>	Fluidizing blower (ESP Blower)
Model	610 Ac
Capacity	750 M <sup>3</sup> /Hr
Diff. Pressure	4000 MMWG
RPM	1329
B.H.P	15.45
Drg. No.	K-GA-0610AH016A3, Rev-1
Make	KAY international limited
<b>Equipment name:</b>	Fluidizing blower (Silo Blower)
Model	59 AC
Capacity	400 M <sup>3</sup> /Hr
Diff. Pressure	4000 MMWG
RPM	1030
B.H.P	8.55
Drg. No.	K-GA-0059AH194A3, Rev-1
Make	KAY international limited

Key design specifications for lime handling system have been detailed below:

<b>Equipment Name:</b>	Lime Apron Feeder
Size:	1800mm wide x 8400 mm Long
Machine Sr. No	6743
TRF reference	SODS-0740/05
Ref. Drg. No.	0-4517-000
Material to be handled:	Lime

<b>Equipment Name:</b>	Lime sizer
Model:	MMD 625 series Twin -shaft sizer, 625 MM shaft centers
Material to be handled:	Lime
Machine serial Number:	S625-0127
Make:	MMD (Mining machinery Developments limited)
<b>Equipment name:</b>	Lime Impactor
Model:	4016/18 Reversible impactor
Material to be handled:	Lime
Feed size:	(-)300MM
Product size:	(-)25MM
Capacity:	300TPH
Make:	M/s. TRF
<b>Equipment Name:</b>	Unbalance motor feeder
Size:	1600 X2000
TRF reference:	SODS-0740/07
Reference drg. No:	1-3954-000
Material to be handled:	Lime
<b>Equipment Name:</b>	Mobile tripper
Size:	600 MM (Motorized) Lime
TRF reference:	IODS 0740/06
Reference drg. No:	1-7921-000
Material to be handled:	Lime
<b>Equipment Name:</b>	Telescopic chute
Size:	Pile hight-9000mm (Max)
TRF reference:	0740/08
Reference drg. No:	0-7406-000
Material to be handled:	Lime

#### PART E: Balance of Plants

Design specifications of the condenser have been detailed below:

<b>Equipment Name:</b>	<b>Condenser</b>
Type:	Single shell
Thermal design	HEI/ASME VIII
Make:	STF s.p.a Costruzione Impianti
Design pressure tube side	5 kg/cm <sup>2</sup> /g
Design pressure shell side	1 (vacuum) kg/cm <sup>2</sup> /g
Design temperature tube side	60 degree C

Design temperature shell side	90 degree C
Material handling	Sea water
Flow	16800000 Kg/h
Total length of tubes	10070 mm

Key design specifications for pumps and miscellaneous items have been detailed below:

<b>Equipment Name:</b>	<b>Boiler Feed Pumps</b>
Make:	Kirloskar Ebra Pumps Ltd.
No. of pumps	3 * 50%
No. of pumps normally working	2
Type of pump	Centrifugal barrel
Type of drive	Electrical motor
No. of stages	7
Dynamic head	1893 MWC
NPSH required	8.5 MWC
Pump specific feed	937 RPM
Power required at pump shaft under shut-off conditions	1050 MWC
<b>Equipment Name:</b>	<b>Booster Pumps</b>
Make:	Kirloskar Ebra Pumps Ltd.
Type of pump	Centrifugal, volute, double entry
No. of pumps required per turbo set	3
Type of journal bearings	Roller
No. of bearings	2
Type of lubrication	Oil
Type of coupling	Flexible
Casing material	BS 1504 161 G 430 or equivalent
Shaft material	BS 1504 425 C11
Impeller material	BS 1504 425 C11
<b>Equipment Name:</b>	<b>Condensate Extraction Pump</b>
Make:	Kirloskar Brother Ltd.
Type of operation	Continuous
No of working pumps	2
No of standby pumps	1
Pump classification	Barrel
Pump orientation	Vertical
Impeller classification	Closed
TDH developed at design capacity	223 mmWC
Min. NPSH required at the eye of the first stage impeller	2.6 mmWC

<b>Equipment Name:</b>	<b>Deaerator</b>		
Make:	GEA Energy System (I) Ltd.		
Type	Spray cum tray cum reboiling type		
Storage tank weight	24 tons		
Deaerator head	3.5 tons		
Deaerator ID	1800 mm		
Deaerator head overall length	4000 mm		
Deaerator header dished end thickness	10 mm		
Storage tank ID	3400 mm		
Storage tank length	11500 mm		
<b>Equipment Name:</b>	<b>LP Bypass System</b>		
Number of valves	1		
Types of valves	Angle		
Type of actuator	Hydraulic		
Rated flow capacity	243		
Trim material	x19CrMoVNbN111 or Equal		
<b>Equipment Name:</b>	<b>LP Heater System</b>		
	<b>LPH1</b>	<b>LPH2</b>	<b>LPH2</b>
Type	Shell and tube	Shell and tube	Shell and tube
Make	L&T	L&T	L&T
Size	4.212M <sup>3</sup> (SHELL) 1.080M <sup>3</sup> (TUBE)	5.850M <sup>3</sup> (SHELL) 1.663M <sup>3</sup> (TUBE)	4.15M <sup>3</sup> (SHELL) 1.40M <sup>3</sup> (TUBE)
Shell ID	870	980	905
A.V. length of U-tube including tube plate thickness	16700	18700	18400
Number of units	1	1	1
Position	Horizontal	Vertical	Vertical
Location	Indoor (inside condenser neck)	Indoor	Indoor
<b>Equipment Name:</b>	<b>HP Bypass System</b>		
Number of valves	1		
Types of valves	Angle		
Type of actuator	Hydraulic		
Rated flow capacity	280		
Trim material	x19CrMoVNbN111 or Equal		
<b>Equipment Name:</b>	<b>HP Heater System</b>		
	<b>HP5</b>	<b>HP6</b>	
Type	Shell and tube	Shell and tube	
Make	BHEL	BHEL	
Size	21.873KG/HR(SHELL)	21.873KG/HR(SHELL)	

	369.612T/HR(TUBE)	369.612T/HR(TUBE)
Arrangement	Vertical	Vertical
Design and construction standard	ASMEVIII-HEI	ASMEVIII-HEI
Shell side operating pressure	20.38 kg/cm2 (abs)	35.08 kg/cm2 (abs)
<b>Equipment Name:</b>	<b>CCW Pumps (A, B, C)</b>	
Manufacturer	BEACON WEIR LTD.	
Capacity	1375 m <sup>3</sup> /hr.	
<b>Equipment Name:</b>	<b>ACW Pumps (A, B, C)</b>	
Manufacturer	BEACON WEIR LTD.	
Capacity	1850 m <sup>3</sup> /hr.	
<b>Equipment Name:</b>	<b>Plate-type Heat Exchangers (A, B, C)</b>	
Manufacturer	IDMC LTD.	
<b>Equipment Name:</b>	<b>Chiller compressor (#1, 2, 3, 4)</b>	
Manufacturer	Blue Star	
Capacity	90 TR	
<b>Equipment Name:</b>	<b>Chiller pump (#1, 2, 3, 4)</b>	
Manufacturer	BEACON WEIR LTD.	
Capacity	65 m <sup>3</sup> / hr.	
<b>Equipment Name:</b>	<b>Auxiliary cooling tower</b>	
Manufacturer	COOL TECH COOLING TOWER	
Capacity	100 TR	
<b>Equipment Name:</b>	<b>Condensate pump (#1, 2)</b>	
Manufacturer	Ajay Pump	
Capacity	70 m <sup>3</sup> / hr.	
<b>Equipment Name:</b>	<b>Air Handling Unit (#1, 2, 3)</b>	
Manufacturer	Blue Star	
Capacity	39200 CMH / AHU	
<b>Equipment Name:</b>	<b>AC#1, 2 LIME CONTROL ROOM</b>	
Manufacturer	Blue Star	
Capacity	10 TR	
<b>Equipment Name:</b>	<b>EXCITATION CONTROL ROOM U#1 , U#2, AC#1, AC#2</b>	
Manufacturer	Blue Star	

Capacity	10 TR
<b>Equipment Name:</b>	<b>ESP CONTROL ROOM U#1 , U#2, AC#1, AC#2</b>
Manufacturer	Blue Star
Capacity	10 TR
<b>Equipment Name:</b>	<b>MHP CONTROL ROOM AC#1, AC#2, AC#3</b>
Manufacturer	Blue Star
Capacity	10 TR
<b>Equipment Name:</b>	<b>AHS CONTROL ROOM AC#1, AC#2</b>
Manufacturer	Blue Star
Capacity	10 TR
<b>Equipment Name:</b>	<b>VATECH CONTROL ROOM AC#1, AC#2</b>
Manufacturer	Blue Star
Capacity	10 TR

Design specifications of cooling tower are as below:

<b>Equipment Name:</b>	Cooling Tower (CT)
Number of towers	2
Total cells per tower	9
Water flow rate / cell	3111 m <sup>3</sup> /hr./cell
Hot water temperature	41 Degree C
Cold water temperature	34 Degree C
Evaporation loss at design	1.225% of circulating water
Drift loss at design	<0.001% of circulating water

Key design specifications associated with the sea water treatment plant have been detailed below:

<b>Equipment Name:</b>	Sea water intake pump
Make:	KBL
Model no:	BHQ 32 M4
Drg no:	TC 152 02 006 2
Type:	Single stage, Self-water lub
<b>Equipment Name:</b>	Desal feed pump
Make	KBL
Model no:	BHR 35 -18 deg
Drg no:	TC 153 02 020 2
Type:	Two stage, Self-water lub

<b>Equipment Name:</b>	Back wash recirculation pump
Make	KBL
Model no:	BHR 28 M-30 deg
Drg no:	TC 153 02 021 2
Type:	Single stage, Self-water lub

## Annexure 2: Process Parameters

Ideal process parameters associated with the furnace, superheater, reheater, and other auxiliaries have been detailed below:

Subsystem	Parameter <sup>1</sup>	Units	Values	Remarks
Boiler Drum	Boiler drum working pressure	kg/cm <sup>2</sup> (abs)	152	at 100% MCR of 405 TPH
	Design pressure	kg/cm <sup>2</sup>	157	
	Design metal temperature	degrees C	346	
Burner	Total fuel flow for all heavy oil burners	kg/s	4078	at 45% boiler load
	Oil pressure at Burner	Bar	16	
	Combustion air temperature	degrees C	240	
Economizer	Feedwater temperature at economizer inlet	degrees C	246.8	at 100% MCR of 405 TPH
	Flue gases Temperature at Entrance to Economizer	degrees C	428	at 100% MCR of 405 TPH
	Flue gases Temperature at Exit of Economizer	degrees C	272	at 100% MCR of 405 TPH
	Feed water pressure at inlet to Economizer	kg/cm <sup>2</sup> (abs)	148.1	
	Feed water pressure at outlet of Economizer	kg/cm <sup>2</sup> (abs)	146.5	
	Total pressure drop in fuel gas path across economizer	mmWC	21	
Furnace	Furnace exit gas temperature	degrees C	865	at 100% BMCR of 405 TPH
	Total auxiliary power consumption in main steam generator	KW	5438	at 100% BMCR - Boiler Maximum Continuous Rating
	Design metal temperature	degrees C	393	
	Design pressure of tubes	kg/cm <sup>2</sup>	155	
	Furnace design pressure	mmWC	1020	
	Design pressure of high-pressure piping	Bar	140	
	Design temperature of high-pressure piping	degrees C	540	
	Max. temperature thermal insulation material can withstand	degrees C	650	
	Bed Ash inlet temperature	degrees C	850	
	Bed Ash outlet temperature	degrees C	130	
	Nominal discharge capacity for performance lignite	T/hr.	11.3	
	Max. discharge capacity for performance lignite	T/hr.	16.2	
	Bed ash temperature	degrees C	260	
Soot Blower	Steam pressure	kg/sq cm	16	
	Steam temperature	degrees C	250	
Superheater	Steam flow at final superheater outlet	kg/hr.	405,000	at 100% BMCR of 405 TPH

<sup>1</sup> Source: Alstom Design Document (B-1, B-2)

Subsystem	Parameter <sup>1</sup>	Units	Values	Remarks
	Steam pressure at final superheater outlet	kg/cm <sup>2</sup> (g)	140.1	at 100% BMCR of 405 TPH
	Steam temperature at final superheater outlet	degrees C	538	
	Flue gases Superheater stage 1 (SH5) entrance temperature	degrees C	807	at 100% BMCR of 405 TPH
	Flue gases Superheater stage 2 (SH3) entrance temperature	degrees C	708	at 100% BMCR of 405 TPH
	Flue gases Superheater stage 3 (RH1) entrance temperature	degrees C	565	at 100% BMCR of 405 TPH
	Steam temperature at Inlet to Superheater Stage 1 (SH1)	degrees C	339	at 100% BMCR of 405 TPH
	Steam temperature at Inlet to Superheater Stage 1 (SH2)	degrees C	342	at 100% BMCR of 405 TPH
	Steam temperature at Inlet to Superheater Stage 2 (SH3)	degrees C	357	at 100% BMCR of 405 TPH
	Steam temperature at Inlet to Superheater Stage 2 (SH4)	degrees C	400	at 100% BMCR of 405 TPH
	Steam temperature at Inlet to Superheater Stage 3 (SH5)	degrees C	469	at 100% BMCR of 405 TPH
	Steam temperature at Outlet to Superheater Stage 1 (SH1)	degrees C	342	at 100% BMCR of 405 TPH
	Steam temperature at Outlet to Superheater Stage 1 (SH2)	degrees C	357	at 100% BMCR of 405 TPH
	Steam temperature at Outlet to Superheater Stage 2 (SH3)	degrees C	425	at 100% BMCR of 405 TPH
	Steam temperature at Outlet to Superheater Stage 2 (SH4)	degrees C	494	at 100% BMCR of 405 TPH
	Steam temperature at Outlet to Superheater Stage 3 (SH5)	degrees C	540	at 100% BMCR of 405 TPH
	Steam pressure at Inlet to Superheater Stage 1 (SH1)	Kg/cm <sup>2</sup> (abs)	144.5	
	Steam pressure at Inlet to Superheater Stage 1 (SH2)	Kg/cm <sup>2</sup> (abs)	142.8	
	Steam pressure at Inlet to Superheater Stage 2 (SH3)	Kg/cm <sup>2</sup> (abs)	141.5	
	Steam pressure at Inlet to Superheater Stage 2 (SH4)	Kg/cm <sup>2</sup> (abs)	140	
	Steam pressure at Inlet to Superheater Stage 3 (SH5)	Kg/cm <sup>2</sup> (abs)	136.7	
	Steam pressure at Outlet to Superheater Stage 1 (SH1)	Kg/cm <sup>2</sup> (abs)	142.8	
	Steam pressure at Outlet to Superheater Stage 1 (SH2)	Kg/cm <sup>2</sup> (abs)	142.1	
	Steam pressure at Outlet to Superheater Stage 2 (SH3)	Kg/cm <sup>2</sup> (abs)	140.8	
	Steam pressure at Outlet to Superheater Stage 2 (SH4)	Kg/cm <sup>2</sup> (abs)	137.5	
	Steam pressure at Outlet to Superheater Stage 3 (SH5)	Kg/cm <sup>2</sup> (abs)	135	
	Total pressure drop in fuel gas path across superheaters	mmWC	13.6	
Reheater	Reheater steam flow	kg/hr.	377,680	at 100% BMCR of 405 TPH

Subsystem	Parameter <sup>1</sup>	Units	Values	Remarks
	Steam temperature reheater outlet	degrees C	537	
	Steam temperature at reheater inlet	degrees C	355	at 100% BMCR of 405 TPH
	Pressure drop Across reheater	bar	1.84	at 100% BMCR of 405 TPH
	Steam temperature at Inlet to Reheater Stage 1 (RH1)	degrees C	340	at 100% BMCR of 405 TPH
	Steam temperature at Inlet to Reheater Stage 2 (RH2)	degrees C	442	at 100% BMCR of 405 TPH
	Steam temperature at Outlet to Reheater Stage 1 (RH1)	degrees C	464	at 100% BMCR of 405 TPH
	Steam temperature at Outlet to Reheater Stage 2 (RH2)	degrees C	540	at 100% BMCR of 405 TPH
	Steam pressure at Inlet to Reheater Stage 1 (RH1)	Kg/cm <sup>2</sup> (abs)	35.6	
	Steam pressure at Inlet to Reheater Stage 2 (RH2)	Kg/cm <sup>2</sup> (abs)	34.8	
	Steam pressure at Outlet to Reheater Stage 1 (RH1)	Kg/cm <sup>2</sup> (abs)	35.3	
	Steam pressure at Outlet to Reheater Stage 2 (RH2)	Kg/cm <sup>2</sup> (abs)	33.7	
	Total pressure drop in fuel gas path across reheaters	mmWC	12.9	

Key Process parameters associated with the TAPH have been detailed below:

Parameter <sup>2</sup>	Units	Values	Remarks
Split of primary air and secondary air	%	45%(PA), 55%(SA)	
Inlet temperature to the air heaters (PA)	degree C	46	
Outlet temperature from air heaters (PA)	degree C	247	
Inlet temperature to the air heaters (SA)	degree C	46	
Outlet temperature from air heaters (SA)	degree C	247	
Inlet temperature to the air heaters (Flue gas)	degree C	272	
Outlet temperature from air heaters (Flue gas)	degree C	136	
Pressure at air heater inlet (PA)	mm WC	1850	100% MCR of 405 TPH
	mm WC	1823	92% MCR of 405 TPH
Pressure at air heater outlet (PA)	mm WC	1667	100% MCR of 405 TPH
	mm WC	1665	92% MCR of 405 TPH
Pressure at air heater inlet (SA)	mm WC	1116	100% MCR of 405 TPH
	mm WC	1089	92% MCR of 405 TPH
Pressure at air heater outlet (SA)	mm WC	933	100% MCR of 405 TPH
	mm WC	931	92% MCR of 405 TPH
Pressure drop across air heaters (PA circuit)	mm WC	183	100% MCR of 405 TPH
	mm WC	158	92% MCR of 405 TPH
Pressure drop across air heaters (SA circuit)	mm WC	183	100% MCR of 405 TPH
	mm WC	158	92% MCR of 405 TPH
Max gas velocity across tubes	m/s	7.6	100% MCR of 405 TPH

<sup>2</sup> Source: Alstom Design Document (B-1, B-2)

Parameter <sup>2</sup>	Units	Values	Remarks
	m/s	7.0	92% MCR of 405 TPH
Heat absorbed per kg of fuel	kCal	227.9	100% MCR of 405 TPH
	kCal	224.7	92% MCR of 405 TPH

Key ideal process parameters associated with the fans in the air and flue gas circuit have been detailed below:

Sub-system	Parameter <sup>3</sup>	Units	Values	Remarks
PA fan	Primary air fan discharge pressure	mmWC	1967	100% MCR of 405 TPH
		mmWC	1922	92% MCR of 405 TPH
	Air heater inlet pressure (primary air)	mmWC	1850	100% MCR of 405 TPH
		mmWC	1823	92% MCR of 405 TPH
	Total Pressure drop in primary air circuit	mmWC	1074	100% MCR of 405 TPH
mmWC		1021	92% MCR of 405 TPH	
SA fan	Secondary air fan discharge pressure	mmWC	1244	100% MCR of 405 TPH
		mmWC	1195	92% MCR of 405 TPH
	Air heater inlet pressure (secondary air)	mmWC	1116	100% MCR of 405 TPH
		mmWC	1089	92% MCR of 405 TPH
	Total Pressure drop in secondary air circuit	mmWC	678	100% MCR of 405 TPH
mmWC		616	92% MCR of 405 TPH	
ID fan	Temperature at entrance to ID fan	degrees C	134	
	Temperature at exist of ID fan / entrance to stack	degrees C	136	
	Pressure drop between outlet cone of ESP and inlet of ID fan	mmWC	25.0	
	Pressure drop between outlet of ID fan and inlet of stack	mmWC	45.8	

Key ideal process parameters associated with the cyclone have been detailed below:

Parameter <sup>4</sup>	Units	Values	Remarks
Efficiency	%	99	
Flue gas temperature	degrees C	816	For worst lignite
Flue gas temperature at entrance to cyclones	degrees C	865	100% BMCR of 405 TPH (BMCR – Boiler Maximum Continuous Rating)
	degrees C	857	92% BMCR of 405 TPH
Pressure drop across flue gas path	mmWC	14.7	In gas duct
Max. gas velocity at cyclone inlet	m/sec	20	100% BMCR of 405 TPH
	m/sec	18	92% BMCR of 405 TPH
Max. gas velocity at cyclone outlet	m/sec	32	100% BMCR of 405 TPH
	m/sec	29	92% BMCR of 405 TPH
Percentage of oxygen in flue gases at cyclone exit	%	3.57	100% BMCR of 405 TPH
Flue gas dust concentration before cyclone for worst lignite	N cum/sec	151.5	At 100% BMCR of 405 TPH

<sup>3</sup> Source: Alstom Design Document (B-1, B-2)

<sup>4</sup> Source: Alstom Design Document (B-1, B-2)

Flue gas dust concentration after cyclone for worst lignite	N cum/sec	151.5	At 100% BMCR of 405 TPH
Solid flow dust concentration before cyclone for worst lignite	Kg/sec.	2000	At 100% BMCR of 405 TPH
Solid flow dust concentration after cyclone for worst lignite	Kg/sec.	30.3	At 100% BMCR of 405 TPH
Dust concentration in dust load before cyclone for worst lignite	Kg/N cum	13.2	At 100% BMCR of 405 TPH
Dust concentration in dust load after cyclone for worst lignite	Kg/N cum	0.2	At 100% BMCR of 405 TPH

Key ideal process parameters associated with the ESP have been detailed below:

Parameter <sup>5</sup>	Units	Values	Remarks
Flue gases Temperature at Entrance to ESP	degrees C	136	at 100% BMCR of 405 TPH
Treatment time	Sec	25	For performance lignite
	sec	21.4	For worst lignite
Average bus voltage	kV	43	
Max. gas velocity	m/sec	0.9412	
Precipitator efficiency when any one field is out of service	%	99.927	
Pressure drop across the precipitator/ bag filter	Mm WC	20	
Gas temp drop across precipitator/bag filter	degrees C	5 to 7	
Total power consumption	kW	207	
Dust emission at ESP/outlet	mg/N cum	150	Firing of worst lignite
	mg/N cum	130	Firing of performance lignite
Leakage distance in High tension support insulation	mm	370	
Minimum flash over in High tension support insulation	kV	110	
Primary voltage in ESP transformer	V	415	
Temperature rise above ambient temperature in ESP transformer	degrees C	50	

Key ideal process parameters associated with the main turbine have been detailed below:

Subsystems	Parameters <sup>6</sup>	Units	Values	Remarks
Main Turbine	Rated output	MW	135.99	VWO - valve wide open
	Rated output	MW	125	100% load
	Speed	rpm	3000	
	Condenser vacuum	kg/cm <sup>2</sup> abs	0.102	Both VWO and 100%
	Throttle steam pressure at HP turbine inlet	kg/cm <sup>2</sup>	132.6	Both VWO and 100%
	Throttle steam temperature at HP turbine inlet	degrees C	535	Both VWO and 100%
	Steam pressure at HP Turbine Outlet	kg/cm <sup>2</sup>	39.01	VWO

<sup>5</sup> Source: Alstom Design Document (B-1, B-2)

<sup>6</sup> Source: Ansaldo Design Document (T-1, T-2, T-3, T-4)

Subsystems	Parameters <sup>6</sup>	Units	Values	Remarks
	Steam pressure at HP Turbine Outlet	kg/cm <sup>2</sup>	35.48	100%
	Steam temperature at HP Turbine Outlet	degrees C	352.8	VWO
	Steam temperature at HP Turbine Outlet	degrees C	343.1	100%
	Total auxiliary power consumption	KW	2878	
	Steam pressure before emergency stop valve	kg/cm <sup>2</sup> (abs)	132.6	
	Steam temperature before emergency stop valve	degrees C	535	
	Steam flow through turbine when operating on normal regenerative cycle at rated condition	T/hr.	367.177	
	Max. flow at VWO conditions and power generated	T/hr.	405	
	First critical speed for HP rotor	rpm	below 2300	
	First critical speed for IP/LP rotor	rpm	below 2400	
	Second critical speed for HP rotor	rpm	above 4000	
	Second critical speed for IP/LP rotor	rpm	above 4000	
Generator	Rated terminal voltage	KV	15.75	
	Rated frequency	Hz	50	
	Rated power factor		0.8 Lag	
	Rotor current	A	1246	at MCR
	Rotor voltage	V	261	at MCR
	Rated stator current	A	6232	
	Generator efficiency at 100% load	%	98.56	
	Generator efficiency at 80% load	%	98.41	
	Rated cooling water pressure	kg/cm <sup>2</sup> (g)	10	
	Max. permissible capacitive loading at full load	MVAR	71	
	Max. Capacitive loading for stability at rated voltage and zero power factor	MVAR	75	
	Iron loss at no load	KW	406	
	Stator copper loss at full load	KW	155	at 95 degrees C
	Stray load loss at full load	KW	206	at 95 degrees C
	Rotor copper loss at full load	KW	315	at 95 degrees C
	Friction and windage loss at full load	KW	650	
Mechanical loss including bearing loss at full load	KW	230		

Key ideal process parameters associated with the transformer have been detailed below:

Parameter <sup>7</sup>	Units	Values	Remarks
High Voltage Rated power	MVA	100	ONAN - Oil Natural Air Natural
High Voltage Rated power	MVA	135	ONAF - Oil Natural Air Forced
High Voltage Rated power	MVA	170	OFAF - Oil Forced Air Forced
Low Voltage Rated power	MVA	100	ONAN - Oil Natural Air Natural
Low Voltage Rated power	MVA	135	ONAF - Oil Natural Air Forced
Low Voltage Rated power	MVA	170	OFAF - Oil Forced Air Forced
Rated voltage at no load (HV)	kV	230	ONAF - Oil Natural Air Forced
Rated voltage at no load (LV)	kV	15.75	ONAF - Oil Natural Air Forced
Rated Line Current (HV)	A	251.3	ONAN - Oil Natural Air Natural
Rated Line Current (HV)	A	339.3	ONAF - Oil Natural Air Forced
Rated Line Current (HV)	A	427.2	OFAF - Oil Forced Air Forced
Rated Line Current (LV)	A	3670.1	ONAN - Oil Natural Air Natural
Rated Line Current (LV)	A	4954.6	ONAF - Oil Natural Air Forced
Rated Line Current (LV)	A	6239.1	OFAF - Oil Forced Air Forced
Frequency	Hz	50	
Max. Temperature Rise above 50 degrees C ambient	degrees C	40	Top Oil
Max. Temperature Rise above 50 degrees C ambient	degrees C	50	Avg. windings

Key ideal process parameters associated with the condenser have been detailed below:

Parameter <sup>8</sup>	Units	Values	Remarks
Quantity of steam from Main Turbine	kg/hr.	260595	at MCR - Maximum continuous rating
Enthalpy of steam from Main Turbine	kcal/kg	574.3	at MCR
Temperature of steam from Main Turbine	degrees C	45.8	at MCR
Quantity of drains from feed cycle	kg/hr.	48746	at MCR
Enthalpy of drains from feed cycle	kcal/kg	52.4	at MCR
Temperature of drains from feed cycle	degrees C	52.4	at MCR
Condensate temperature at hot well	degrees C	45.34	
Total heat load	kcal/hr.	138072728.6	
Inlet temperature	degrees C	34	
Outlet temperature	degrees C	42.5	

The ideal process parameters associated with the pumps and miscellaneous items have been detailed below:

Sub-system	Parameter <sup>9</sup>	Units	Values
Boiler Feed Pump	Temperature of feed water	degrees C	177
	Capacity	m <sup>3</sup> /hr.	288
	Speed	rpm	4700
	Efficiency	%	80
	Power input	kW	1628

<sup>7</sup> Source: Alstom Design Document

<sup>8</sup> Source: Ansaldo Design Document (T-1, T-2, T-3, T-4)

<sup>9</sup> Source: Ansaldo Design Document (T-1, T-2, T-3, T-4) and Discussions with ATPS team

Sub-system	Parameter <sup>9</sup>	Units	Values
	Power required by BFP at rated speed	kW	1439
	Efficiency at rated speed	%	77
Booster Pump	Rated speed	rpm	1480
	Design flow	m <sup>3</sup> /hr.	288
	Power input at design flow	KW	50
	Efficiency at design point	%	81
Condensate Extraction Pump	Rotating speed	rpm	1485
	Power required at design point	kW	145
	Efficiency at design point	%	78
LP Heater System	Extraction steam flow at LPH1	T/hr.	9.706
	Extraction steam flow at LPH2	T/hr.	18.324
	Extraction steam flow at LPH3	T/hr.	20.936
	Inlet temperature at LPH1	degrees C	70.3
	Inlet temperature at LPH2	degrees C	106.9
	Inlet temperature at LPH3	degrees C	148.6
	Feed water flow in tubes	kg/hr.	312.729
	Design pressure for tubes	Kg/cm <sup>2</sup> (g)	27.5
	Inlet temperature for tubes in LPH1	degrees C	47.5
	Inlet temperature for tubes in LPH2	degrees C	67.3
	Inlet temperature for tubes in LPH3	degrees C	103.9
	Outlet temperature for tubes in LPH1	degrees C	67.3
	Outlet temperature for tubes in LPH2	degrees C	103.9
	Outlet temperature for tubes in LPH3	degrees C	145.6
	Deaerator	Internal design pressure at Storage tank	kg/cm <sup>2</sup> (g)
Flow rate		T/hr.	370
Storage tank capacity at normal working level		m <sup>3</sup>	100
HP Heater System	Feed water flow	T/hr.	369.612
	Feed water inlet temperature at HPH5	degrees C	176.8
	Feed water inlet temperature at HPH6	degrees C	214.3
	Feed water outlet temperature at HPH5	degrees C	214.3
	Feed water outlet temperature at HPH6	degrees C	241.6
	Extraction steam flow at HPH5	kg/hr.	21.873
	Extraction steam flow at HPH6	kg/hr.	21.413
	Extraction steam inlet temperature at HPH5	degrees C	212.3
	Extraction steam inlet temperature at HPH6	degrees C	241.6
CCW	Mass flow rate for performance lignite in plate heat exchanger	T/hr.	180
	Mass flow rate for performance lignite in plate heat exchanger	T/hr.	310
	Inlet temperature for performance lignite in plate heat exchanger	degrees C	55
	Inlet temperature for performance lignite in plate heat exchanger	degrees C	34
	Outlet temperature for performance lignite in plate heat exchanger	degrees C	40
	Outlet temperature for performance lignite in plate heat exchanger	degrees C	42

Key ideal process parameters associated with the cooling tower have been detailed below:

Sub-system	Parameter <sup>10</sup>	Units	Values	Remarks
CT Fan	Fan speed (desired)	rpm	108.95	
	Efficiency	%	82	
CT Gearbox	Efficiency	%	97.5	
	Nominal reduction ratio		13.54:1	
	Service factor		2.48	
CT motor	Rated power	KW	55	
	Full load speed	rpm	1475	
	Full load efficiency	%	94	
Cooling Tower	Design inlet wet bulb temperature	degrees C	29.66	
	Power consumed at motor inlet terminal per cell	KW	44.74	

Key ideal process parameters associated with the sea water treatment plant have been detailed below:

Component	Parameter <sup>11</sup>	Units	Values
Pre-Treatment Plant	Sea water pre-treatment (Normal flow)	M <sup>3</sup> /HR	3600
	Sea water pre-treatment (Peak flow)	M <sup>3</sup> /HR	4320
	Flash Mixture	M <sup>3</sup> /HR	3600
	Flocculator	M <sup>3</sup>	900
	Air Blower - Gravity Sand Filter	NM <sup>3</sup> /HR	1200
	Sea Water Intake Pump	M <sup>3</sup> /HR	1800
	TWS Spray Pump	M <sup>3</sup>	60
	CT Make Up Pump	M <sup>3</sup> /HR	1550
	Desalination Feed Pump	M <sup>3</sup> /HR	417
	EC Feed Pump	M <sup>3</sup> /HR	40
	Backwash Recirculation Pump	M <sup>3</sup> /HR	300
	Filter Backwash Pump	M <sup>3</sup> /HR	1000
	Centrifuge Feed Pump	M <sup>3</sup> /HR	20
	Centrifuge	M <sup>3</sup> /HR	20
	Lime Solution Tank Agitator	M <sup>3</sup> /HR	5.28
	PE Tank Agitator	M <sup>3</sup> /HR	5.38
	DWPE Tank Agitator	M <sup>3</sup> /HR	5.38
	Alum Dosing Pump	LPH	2160
	PE Dosing Pump	LPH	550
	DWPE Dosing Pump	LPH	653
	Sludge Thickener	M <sup>3</sup> /HR	4320
	Biocide Dosing Pump	M <sup>3</sup> /HR	50
	Polyphosphate Dosing Pump	M <sup>3</sup> /HR	50
Biocide Tank Agitator	M <sup>3</sup> /HR	0.628	
Polyphosphate Tank Agitator	M <sup>3</sup> /HR	0.628	
DM Plant	DM plant flow	M <sup>3</sup> /day	2000
	Potable Water Pump	M <sup>3</sup> /HR	30

<sup>10</sup> Source: Discussions with ATPS team

<sup>11</sup> Source: Discussions with ATPS team

Component	Parameter <sup>11</sup>	Units	Values
	DM Water Supply Pump	M <sup>3</sup> /HR	40
	Chemical Conditioning Dosing Pump	LPH	150
	Acid Unloading Pump	M <sup>3</sup> /HR	10
	Alkali Unloading Pump	M <sup>3</sup> /HR	10
	Acid Dosing Pump	LPH	380
	Alkali Dosing Pump	LPH	500
	Effluent Disposal Pump	M <sup>3</sup> /HR	50
	DM Water Transfer Pump	M <sup>3</sup> /HR	42
	Potable Service Water Pump	M <sup>3</sup> /HR	20
	Potable Water Conditioning Tank Agitator	M <sup>3</sup> /HR	2
	Mixed Bed Exchanger Air Blower	NM <sup>3</sup> /HR	210
	Desalination Water Storage Tank	M <sup>3</sup>	1500
	Acid Bulk Storage Tank	M <sup>3</sup>	15
	Alkali Bulk Storage Tank	M <sup>3</sup>	15
DM Water Storage Tank	M <sup>3</sup>	500	
Desalination Plant	Sea water desalination plant	TPD	2 * 1200
	Antiscalant Dosing Pump	LPH	21
	Antifoam Dosing Pump	LPH	40
	SBS Dosing Pump	LPH	40
	Brine Pump	M <sup>3</sup> /HR	280
	Distillate Pump	M <sup>3</sup> /HR	50
	Condensate Pump	M <sup>3</sup> /HR	10
	Acid Cleaning Pump	M <sup>3</sup> /HR	13.5
	Motive Water Pump	M <sup>3</sup> /HR	90
	Antiscalant Tank Agitator	M <sup>3</sup>	0.628
	Anti-Foam Tank Agitator	M <sup>3</sup>	0.628
SBS Tank Agitator	M <sup>3</sup>	0.628	

# Annexure 3: Layouts/ Process flow diagrams

A. The broad process flow diagram for the plant indicating the key systems has been illustrated below:

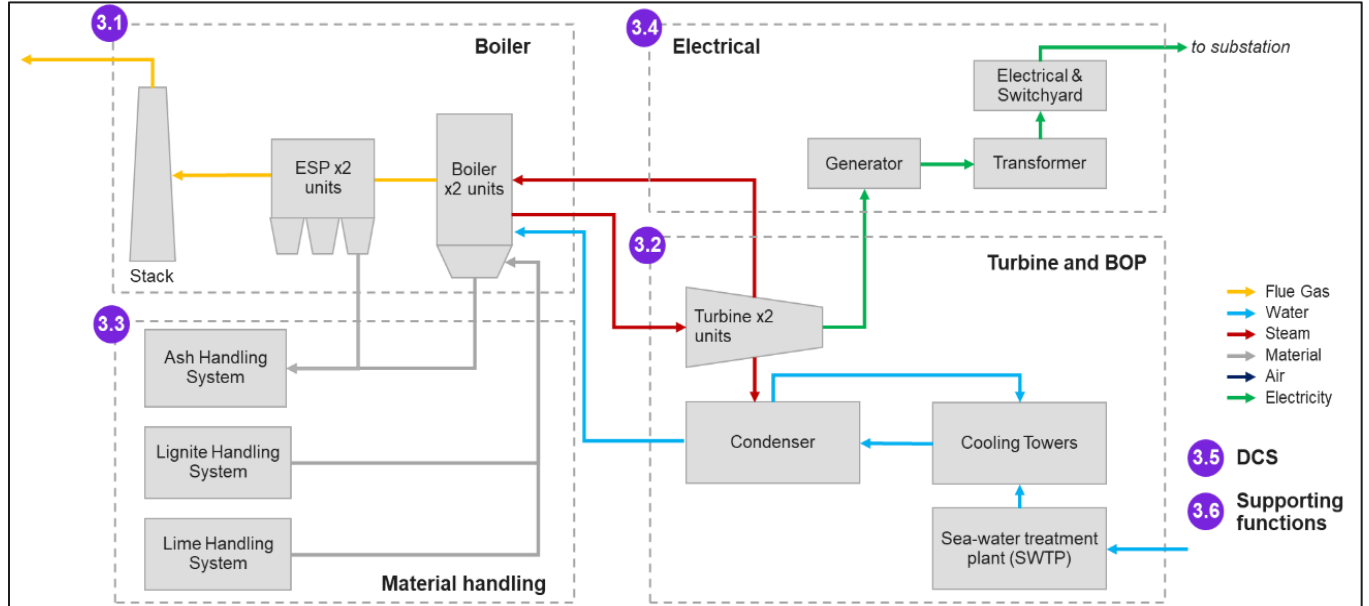
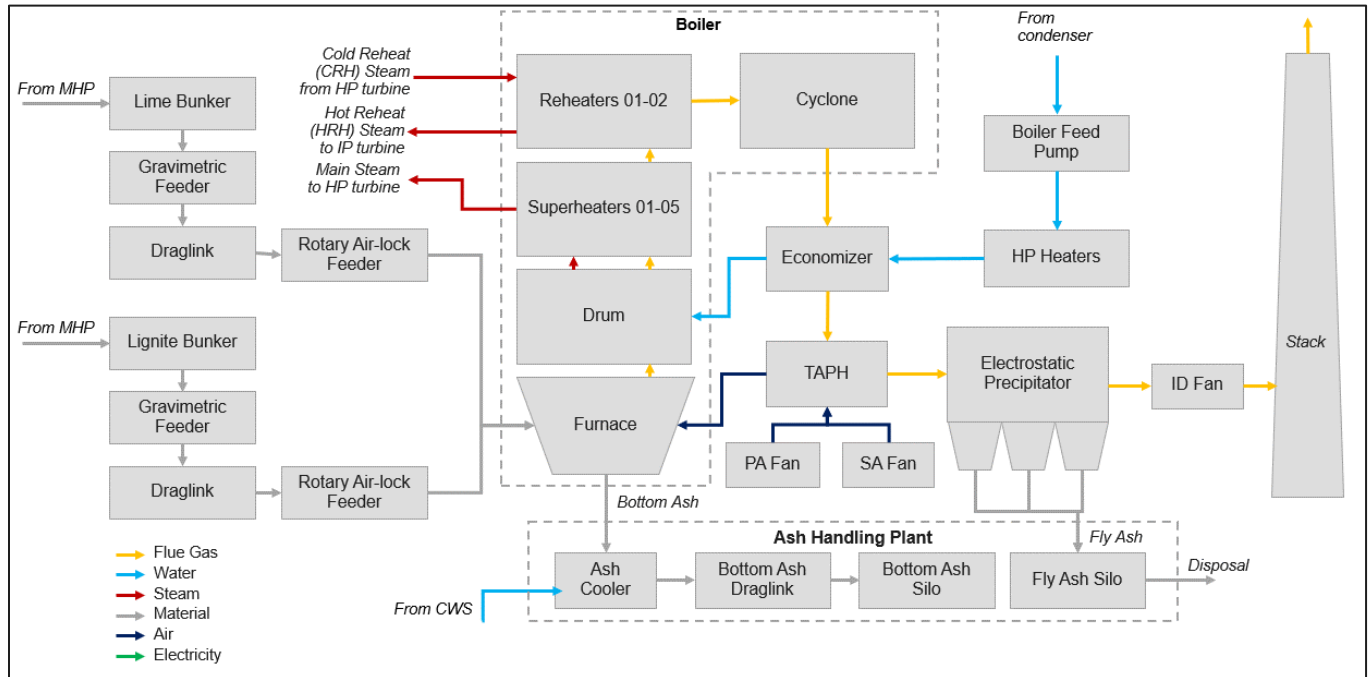
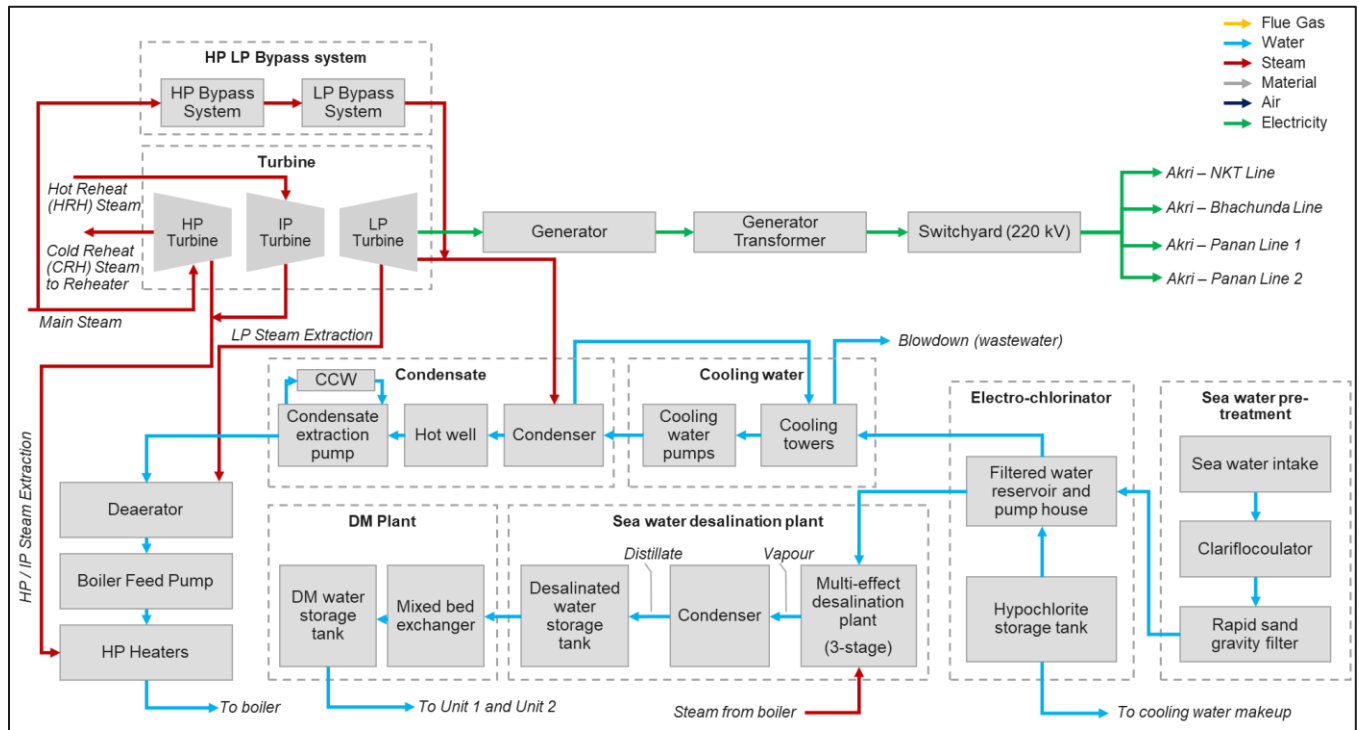


Figure: Overall Plant Process Flow Diagram

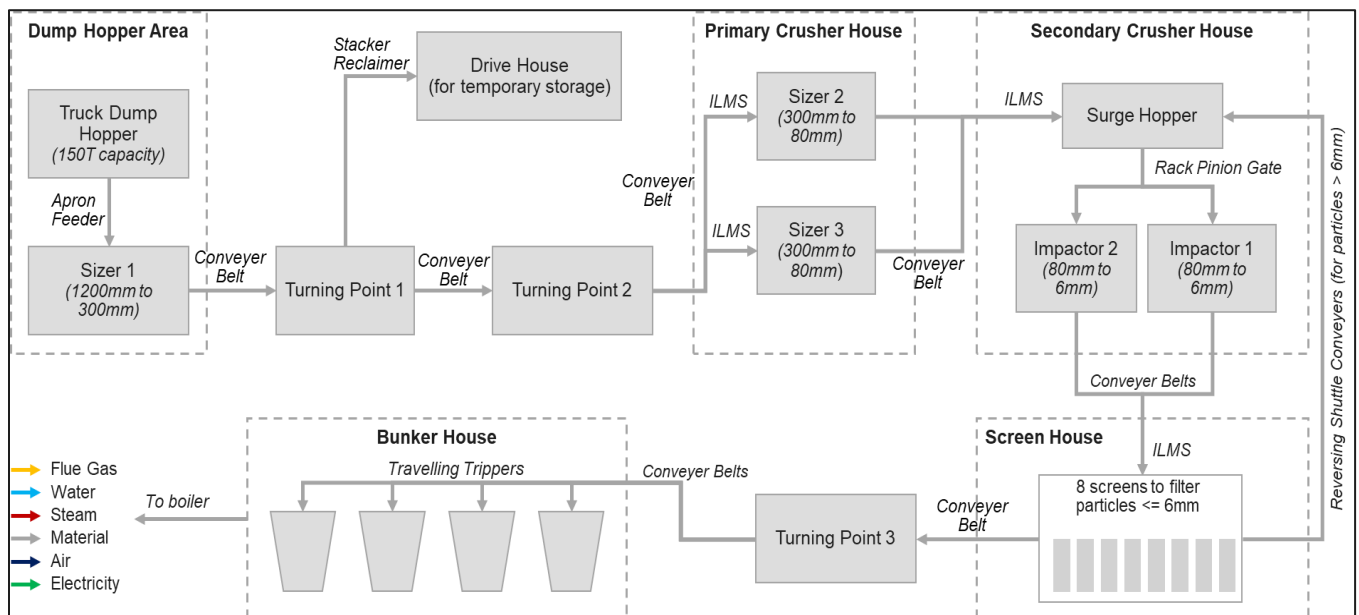
## B. Boiler process flow diagram



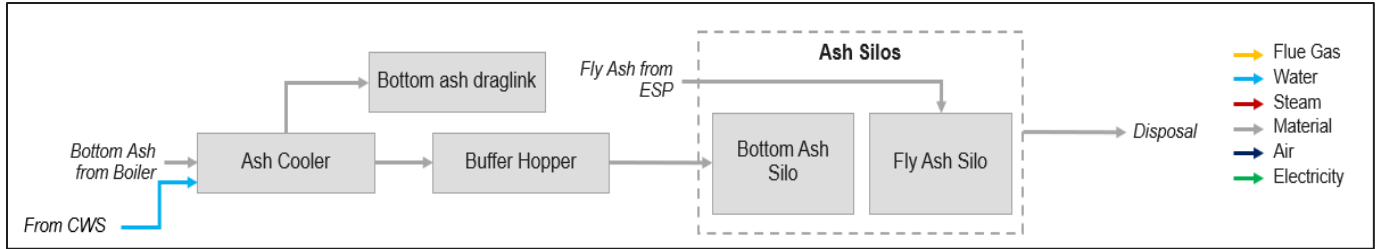
### C. Turbine Process Flow Diagram



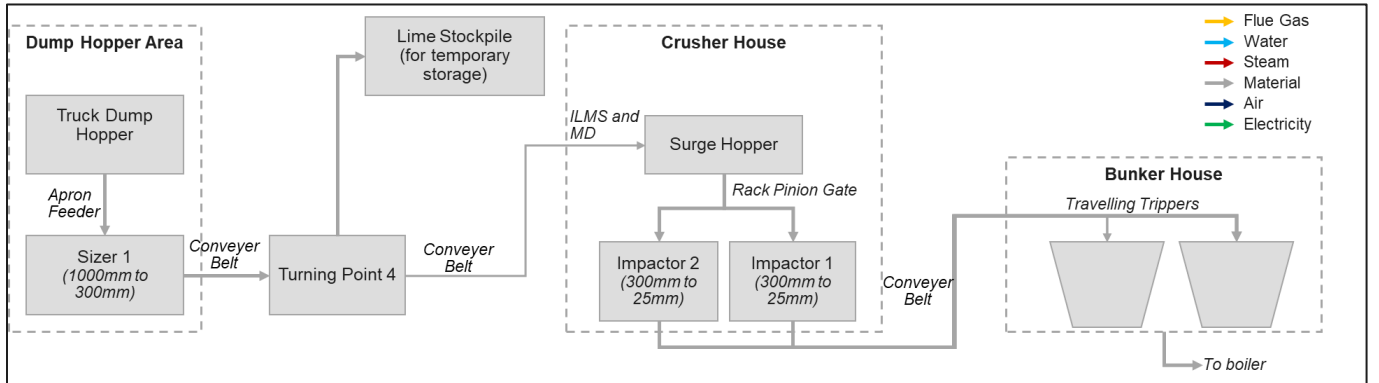
### D. Lignite Handling system process flow diagram



### E. Ash Handling system process flow diagram



F. Lime handling plant process flow diagram



## ANNEXURE 4: KPI definitions

Symbol	Meaning
N	Number of days in the given period
GE <sub>i</sub>	Station generation in MU for the i <sup>th</sup> day in the given period
C <sub>c</sub>	Colony consumption (consumption of energy by the colony)
IC	Installed Capacity of the generating station in MW (here 250 MW)
DC <sub>i</sub>	Average declared capacity in MW for the i <sup>th</sup> day in the given period
APC <sub>n</sub>	Normative Auxiliary Power Consumption% (considered at 11.5%)
APC <sub>i</sub>	Auxiliary power consumption % for the i <sup>th</sup> day in the given period
CL <sub>i</sub>	Average capacity loss (due to grid, lignite, outage, or station problem) in MU for the i <sup>th</sup> day in the given period
PAF	Plant Availability Factor (%)
PLF	Plant Load Factor (%)
E <sub>i</sub>	Export defined as sum of export energy of all lines (MU)
I <sub>i</sub>	Import defined as sum of import energy of all lines (MU)
Col. <sub>i</sub>	Energy consumption in the colony in MU for the i <sup>th</sup> day in the given period
SFO	Secondary Fuel Oil
HFO	Heavy Fuel Oil

### Plant Availability Factor (PAF)

**Definition:** Plant Availability Factor means the average of daily average declared energy capacities as certified in the SEA (State Energy Account) by SLDC (State Load Dispatch Centre) for all days during that period expressed as a percentage of the installed capacity of the generating station minus the actual auxiliary power consumption. Declared energy capacity is defined as station generation at that day minus the auxiliary power consumption of that specific day.

**Formula:** 
$$PAF = \frac{\sum_{i=1}^N (DC_i + CL_i)}{N \times IC \times (1 - APC_n)} \times 100 (\%)$$

“Declared Capacity (DC)” means capability of the generating station to deliver ex-bus electricity in MW declared by such generating station in relation to any time block of the day as defined in grid code or whole of the day. These capacities shall be based on certificates issued by SLDC.

“Capacity losses (CL)” mean loss of ex-bus electricity in MW, which could not be delivered in any time block of the day or whole of the day which are beyond the control of O & M Contractor, as decided by Owner’s discretion, including but not limited, to the following causes:

- Disruption of fuel supply
- Blackout or electrical evacuation line tripping causing generation loss.
- Force Majeure Events.

## Station Heat Rate (SHR)

Definition: Station Heat Rate shall mean the Station Heat Rate of the unit, expressed in kcal per KWh.

Formula:

SHR

$$= \sum_{i=1}^N \frac{(Lignite\ consumed\ in\ ith\ day\ (in\ kgs) \times Weighted\ Avg.\ AFB\ GCV\ of\ Lignite\ in\ ith\ day\ (\frac{kcal}{kg})) + (HFO\ consumed\ in\ ith\ day\ (in\ litres) \times Weighted\ Avg.\ AFB\ GCV\ of\ HFO\ in\ ith\ day\ (\frac{kcal}{litres}))}{GE_i \times 1000000} \left(\frac{kcal}{kWh}\right)$$

1. SHR-*AFB* shall be calculated on daily basis for each 24 Hours period starting from 00:00 Hours to 24:00Hours. The SHR-*AFB* is to be calculated separately for each unit and for overall station for performance monitoring purpose. However, station weighted average SHR-*AFB* will be considered for LD and incentive determination.
2. Lignite consumption (in kgs) is taken for a period of 24 hours or one day. Total lignite consumption (for 24 Hrs. period/day) figure is taken from coal feeders.
3. Weighted Average GCV of lignite (as Fired) = Lignite weighted GCV is calculated on daily basis for different type of samples taken from lignite feeders by autosampler for each bunker. Composite sample for both the units taking lignite samples from all lignite feeders to be made and tested to get weighted average GCV of as-fired lignite for the given day and specified unit.
4. Similar to point 2 and 3 for consumption quantity and weighted average GCV for HFO
5. Similar methodology of SHR shall be used for month/year/any period as required as per contract.
6. Similar methodology of SHR shall be used for month/year/any period as required as per contract.
7. SHR will be adjusted for loading factor and lignite quality (GCV, Moisture and Ash Content) which will be shared with the Bidders shortly.

There will be a third party agency to check the lignite quality at the unloading point and the feeding point, payment for which will be borne by the Owner. The lignite quality as per the lab reports submitted by this agency will be considered as final.

## Auxiliary Power Consumption (APC)

Definition: Auxiliary Power Consumption (APC) means the energy consumed in the auxiliaries of the generating station.

Formula:  $APC = \sum_{i=1}^N \frac{(GE_i - E_i + I_i - C_c)}{GE_i - C_c} * 100 (\%)$  GE<sub>i</sub>: The previous day's integrator reading is subtracted from the current day's integrator reading to arrive at day's total Generation of the Plant. Energy meter reading is taken daily at 00:00 hrs. Total Generation is Sum of Generation of Unit(s), readings of which are taken from Generator Energy Meter.

C<sub>c</sub>: Colony consumption shall mean the consumption of energy by the colony

Net Export: Outgoing lines from which power is evacuated are equipped with energy meters showing import and export energy consumption (Both for Main & Check Energy Meter). The previous day's integrator reading is subtracted from the current day's integrator reading to arrive at day's total Net Export of the Plant. Energy meter reading is taken daily at 00:00 hrs. for each line.

Net Export: =  $E_i - I_i$  = (Sum of Export Power of All lines) - (Sum of Import Power of All lines).

For computation purpose, main energy meter readings are to be considered. In case of outage of main energy meter, check energy meter reading will be used for computation purpose. At the end of each month, the energy meter readings will be validated with those taken by State officials for billing purpose through meter recording instrument (MRI). Any shortfall/ excess energy consumption will be suitably adjusted in auxiliary power.

Aux. Power Consumption (APC) target is based on 100% loading. At loading below 100%, APC calculation will be done by developing curves that establish the correlation of APC consumption with respect to loading and in the absence of reliable data on this aspect, it will be established in a fair and transparent manner by conducting an Energy Audit of the entire plant within one month from takeover to establish the base line data for different loading (80%, 60%,40%) conditions. Based on the data so obtained, the Station APC curve will be developed which becomes a basis for KPI calculation for part load operations.

Note: The impact on APC for reasons not attributable to the O&M partner such as reserve shutdowns, black outs, external grid issues etc. shall not be considered for APC calculations as per Owner's discretion.

### **Specific Secondary Fuel Oil Consumption**

Definition: The quantity of consumption of Secondary Fuel Oil (SFO) for the purpose of start-up and support fuel during low-load operation of the plant required to generate 1 kWh unit of energy.

Formula:  $\sum_{i=1}^N \frac{\text{Total SFO consumed in } i\text{th day (in ml)}}{GE_i \times 1000000}$  (ml/ kWh)

Note: Oil consumption for reasons not attributed to O&M partner (reasons like Owner decided to operate below technical minimum, grid demand, fuel supply shortage etc.) shall be reduced from total SFO consumption calculation. Further start up fuel for reserved shutdowns due to grid requirements, or shutdowns due to fuel shortage, black out, transmission line tripping shall be reduced from total SFO consumption calculation after discussions with the Owner.

### **In-plant Lignite Quality Losses**

$$\text{In - plant Lignite Quality Loss} = \frac{\text{As Received GCV} - \text{As Fired GCV}}{\text{As Received GCV}}$$

**As Received GCV**: The weighted GCV (ARB) obtained from samples taken from trucks unloaded at the plant for the subject month will be analyzed and weighted GCV (ARB) of all samples taken for the month (for which GCV loss is calculated) will be called "As Received GCV" for the month.

**As Fired GCV:** The weighted GCV (ARB) from the samples taken from the auto sampler or manual sampling before feeding to the bunkers in the month (for which GCV loss is calculated) will be called “As Fired GCV” for the month.

1. GCV loss penalties, under normal conditions and non-deviance of any of the clauses below will be computed monthly.
2. Physical verification (PV) of lignite will be done on monthly basis by a 3<sup>rd</sup> party contractor in the presence of GMDC CHP team and yard supervisor from successful bidder’s team.
3. The 3<sup>rd</sup> party contractor would be appointed by GMDC for the monthly physical verification.

There will be a third party agency to check the lignite quality at the unloading point and the feeding point, payment for which will be borne by the Owner. The lignite quality as per the lab reports submitted by this agency will be considered as final.

### **Lignite GCV loss measurement guideline**

#### **Illustration**

Weighted average As Received GCV at plant (Kcal/Kg) = 3050 Kcal/Kg

Weighted average As Fired GCV at bunker (Kcal/Kg) = 2950 Kcal/Kg

*In – plant Lignite Quality Loss* =  $(3050-2950)/3050 = 3.4\%$

### **In-plant Lignite Quantity Losses**

$$= \frac{\text{Opening Stock of coal + Lignite received quantity} - (\text{Closing stock of coal} + \text{Lignite fired quantity})}{\text{Opening Stock of Stock} + \text{Lignite received quantity}}$$

#### **Illustration**

Opening Stock of coal + Lignite received quantity (MT) = 2,40,000 MT

Closing stock of coal + Lignite fired quantity (MT) = 2,35,000 MT

*In – plant Lignite Quantity Loss* =  $(240000-235000)/240000 = 2\%$

### **Spares Inventory Management**

Spares will be defined in three categories (Priority 1, Priority 2 and Priority 3). List of Priority 1 (Critical Spares) will be given to the Successful Bidder post award of contract List of spares in Priority 2 and 3 will be mutually defined by the Owner and the Successful Bidder at the commencement of the contract. The weightage given to each of the three categories will be as follows:

Priority 1: 60% weightage

Priority 2: 30% weightage

Priority 3: 10% weightage

For each of the spares in each of the categories, a minimum (safety stock) level of inventory required and a maximum level of inventory required will be mutually defined by the Owner and the Successful Bidder at the commencement of the contract and 1<sup>st</sup> week of every month thereafter. The aligned schedule will be final and considered for LD calculations.

Spares inventory management compliance will be based on the weighted average index as described below in the illustration:

Priority 1 Spares Management

<b>Spares</b>	Minimum Inventory Level (A)	Maximum Inventory Level (B)	Current Level (C)	Score = 1 if C is $\geq A$ and $\leq B$ Score = 0 if $C < A$ OR $C > B$
Spare 1	10	80	5	0
Spare 2	5	20	8	1
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
Spare 100	2	5	4	1
<b>Total</b>				89

Priority 2 Spares Management

<b>Spares</b>	Minimum Inventory Level (A)	Maximum Inventory Level (B)	Current Level (C)	Score = 1 if C is $\geq A$ and $\leq B$ Score = 0 if $C < A$ OR $C > B$
Spare 1	80	120	100	1
Spare 2	15	45	30	1
..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
Spare 100	20	50	4	1
<b>Total</b>				99

Priority 3 Spares Management

<b>Spares</b>	Minimum Inventory Level (A)	Maximum Inventory Level (B)	Current Level (C)	Score = 1 if C is $\geq A$ and $\leq B$ Score = 0 if $C < A$ OR $C > B$
Spare 1	100	200	155	1
Spare 2	50	120	8	0

..	..	..	..	..
..	..	..	..	..
..	..	..	..	..
Spare 100	12	50	40	1
<b>Total</b>				90

Weighted Average Index= 60% \* 89 + 30% \* 99 + 10% \* 90 = 92.1%

### **Preventive Maintenance Compliance (PM Compliance)**

Definition: Compliance (%) to the preventive maintenance schedule is defined as number of PM performed during a given period as a % of total scheduled PM in that given period.

Formula: PM compliance % =  $\frac{\text{Total number of PM performed in given period}}{\text{Total number of scheduled PM in that given period}} \times 100$  (%)

Note: The O&M partner should make a comprehensive PM schedule as required and align it with Owner representative before start of contract and 1<sup>st</sup> week of every month thereafter. The aligned PM schedule will be final and considered for LD calculations, based on the output of the implemented software as per scope of work. Incomplete preventive maintenance for a particular month will be carried forward to the next month.

### **Personnel Deployment**

Key Positions (Plant Head, Function Heads and Department Heads as mentioned in Annexure 5): Key positions will proceed on leave with proper communication to owner, ensuring no overlap in leaves. During the annual leaves of absence of these Key Positions, O&M Contractor will make standing arrangements with internal available staff. There will be no deduction when Key Position employee's absence will be on account of his annual leaves. However, when Key Position employee submits resignation and relieved from the Company, O& M Contractor will ensure the replacement within 1 month, post being interviewed and approved by the Owner. For such absence period beyond 1(one) month from the date of exit of employee from site, penalty @ Rs. 3,000 /- for each day per person for non-availability of these key staff will be applied. It may be noted that even during this absence period, O&M Contractor will try to make standing arrangements so that work doesn't hamper. For other category of staff up to Engineer level (non-key positions) is not available for the period of more than 3 months, penalty @ Rs. 2,000 per day per person shall be applicable during the operating period of the contract. In case of appointment delay beyond 3 months from the date of exit for key positions, same shall be fulfilled from other sites/HO) by O&M contractor. In case of non-compliance, owner will have the discretion in the matter.

### **Emissions**

O&M Contractor shall ensure that the emissions are maintained within Pollution Control Board norms and clearances. It shall follow the guidelines of Ministry of Environment and Forest (MOEF) and the limits will be as per MoEF guidelines.

The O&M Contractor shall also ensure the following parameters are maintained as per standards / statutory norms:

1. Emission norms with reference to SPM, SOX, and NOX.
2. Water Chemistry as per standards.
3. Specific water consumption as per industry norm.
4. Fugitive coal / dust emissions from Plant.
5. Zero discharge of effluents.

Deviations from the design norms, in case of points 2, 3, 4 & 5 will have to be corrected, within reasonable time to ensure no adverse effect on the plant and equipment by the O&M Operator at no cost to the Owner.

### **Safety**

O&M Contractor shall ensure proper site safety and maintain zero Lost Time Incident (LTI), where LTI means an incident resulting into injury to a person such that they are not in a position to perform their assigned duty within 48 hours of the incident taking place.

The O&M Operator shall guarantee - no lost time due to injury (LTI; Guaranteed Safety Level), reportable under prevailing labor and factories laws and regulations, caused due to accidents at the Plant.

For every accident at the Plant resulting in the death of any O&M Plant Staff, the O&M Operator shall pay to the Owner as Liquidated Damages:

- a. The overall actual charges applicable in case of death of any O&M Plant Staff and
- b. Other reportable injury to any Plant O&M Staff, Rs 50,000 (Rupees Fifty Thousand)

Notwithstanding any Liquidated Damages paid by the O&M Contractor to Owner, the O&M Operator shall be solely responsible to compensate all workmen and other victims (or their closest surviving relative as the case may be) for any accident at the Plant during the Term as per the provisions of applicable law.

Furthermore, the O&M Contractor shall indemnify, defend and hold harmless the Owner from any liability in this regard.

## ANNEXURE 5: Workforce Details

### Indicative Personnel list

- CVs to be submitted for the key personnel mentioned in the table below; key personnel to be deployed for the contract basis the CVs submitted

- All key personnel will be interviewed by the Owner and approved; Any replacement of key personnel (whose CV has been originally submitted) by equivalent member (whose CV has not been originally submitted) should be interviewed and approved by the Owner

S. No.	Designation	Qualification	Min. Experience (in years)	Total Manpower	Key Personnel
<b>A. Supervisors</b>					
1	Plant Head	BE (Mech/Elect)	15-20 years relevant experience in O&M and site administration	1	Yes
2	Manager (Operations In-Charge & Planning)	BE (Mech/Elect); Boiler proficiency with BOE and NPTI required	10-12 years relevant experience in operations execution and planning	1	Yes
3	Manager (Maintenance In-Charge & Planning)	BE (Mech/Elect)	10-12 years relevant experience in maintenance execution and planning	1	Yes
4	Manager (MHP O&M In-Charge & Planning)	BE (Mech/Elect)	10-12 years relevant experience in MHP O&M execution and planning	1	Yes
5	Manager (Plant Efficiency / Performance / TS Head)	BE (Mech/Elect)	10-12 years relevant experience in O&M execution and planning	1	Yes
<b>B. Operations</b>					
1	Shift In-Charge (Operations) (Main Control Room Operations; CHP/AHP Control Room Operations)	BE (Mech/Elect) / Diploma (Mech/Elect); Boiler proficiency with BOE and NPTI required	5-7 years relevant experience	5	-
2	PLC/Desk Operator (Turbine, boiler, and lime units; MHP, AHP control room)	BE (Mech/Elect/C&I) / Diploma (Mech/Elect/C&I); Boiler proficiency with BOE and NPTI required	3-5 years relevant experience	15	-
3	Field Operator (MHP contract - field operators)	ITI/Experienced	3-5 relevant experience	30	-
4	Field Engineer (Boiler (2 units), turbines (2 units), 6.6 KV, Switchyard, Cooling Tower;	BE/DIPLOMA; Boiler proficiency with BOE and NPTI preferred	3-5 relevant experience	15	-

	auxiliary boiler to be taken care by these people only)				
5	Electrician (Shift Operations)	Diploma (Elect)	7-9 relevant experience	6	-
<b>C. Maintenance</b>					
1	MHP In-Charge	BE/DIPLOMA (Mech/Elect)	8-10 years relevant experience in MHP maintenance execution and planning	1	Yes
2	Shift In-Charge (MHP Maint.)	BE/DIPLOMA (Mech/Elect)	5-7 years relevant experience in maintenance execution and planning	3	-
3	Field Engineer (MHP Maint.)	BE/DIPLOMA (Mech/Elect)	3-5 years relevant experience in maintenance execution and planning	4	-
4	Boiler maintenance In-Charge	BE/DIPLOMA (Mech/Elect)	8-10 years relevant experience in Boiler maintenance execution and planning	1	Yes
5	Shift In-Charge (Boiler Maint.)	BE/DIPLOMA (Mech/Elect)	5-7 years relevant experience in maintenance execution and planning	3	-
6	Field Engineer (Boiler Maint.)	BE/DIPLOMA (Mech/Elect)	3-5 years relevant experience in maintenance execution and planning	4	-
7	Turbine maintenance In-Charge	BE/DIPLOMA (Mech/Elect)	8-10 years relevant experience in Turbine maintenance execution and planning	1	Yes
8	Shift In-Charge (Turbine Maint.)	BE/DIPLOMA (Mech/Elect)	5-7 years relevant experience in maintenance execution and planning	3	-
9	Field Engineer (Turbine Maint.)	BE/DIPLOMA (Mech/Elect)	3-5 years relevant experience in maintenance execution and planning	4	-
10	BOP maintenance In-Charge	BE/DIPLOMA (Mech/Elect)	8-10 years relevant experience in BOP maintenance execution and planning	1	Yes
11	Shift In-Charge (BOP Maint.)	BE/DIPLOMA (Mech/Elect)	5-7 years relevant experience in maintenance execution and planning	3	-
12	Field Engineer (BOP Maint.)	BE/DIPLOMA (Mech/Elect)	3-5 years relevant experience in maintenance execution and planning	4	-

<b>D. Electrical and C&amp;I Maintenance</b>					
1	Electrical In-Charge	BE/DIPLOMA (Elect/Instrumentation)	8-10 years relevant experience in E&I O&M execution and planning	1	Yes
2	C&I In-Charge	BE/DIPLOMA (Elect/Instrumentation)	8-10 years relevant experience in E&I O&M execution and planning	1	Yes
3	Electrical Engineer	BE/DIPLOMA (Elect/Instrumentation)	4-6 years relevant experience in electrical maintenance	14	-
4	C&I Engineer	BE/DIPLOMA (Elect/Instrumentation)	4-6 years relevant experience in C&I maintenance with exposure to PLC troubleshooting	12	-
<b>E. Administration and Misc Staff</b>					
1	Store Keeper	Graduate/Diploma/Suitable	2-5 years relevant experience in site stores management activities	2	-
2	Store Assistant	Graduate/Diploma/Suitable	1-2 years relevant experience in site stores management activities	1	-
3	Office Assistant	Graduate/Diploma/Suitable	2-5 years relevant experience in site HR/IR/Accounts activities	1	-
4	HR/ Admin	Graduate/Diploma/Suitable	2-5 years relevant experience in site HR/IR/Accounts activities	1	-
5	Security Staff	Experienced	3-5 years relevant experience	5	-
6	Purchase Officer	Graduate/Diploma/Suitable	2-5 years relevant experience in site Purchase/Accounts activities	1	-
<b>F. Technical Cell</b>					
1	Maintenance planning	Graduate/Diploma/Suitable	5-7 years relevant experience in maintenance planning and activities	3	-
2	Performance monitoring	Graduate/Diploma/Suitable	5-7 years relevant experience in performance monitoring	3	-
<b>G. EHS/ Support functions</b>					

1	EHS	B. tech/BE in mechanical/ civil engineering; Diploma in industrial safety	5-7 years relevant experience in developing & implementing safety management system; conducting compliance audits, etc.	5	-
<b>H. Operations (SWTP, RO plant, Chemistry lab)</b>					
1	Chemical Lab in-Charge	M.Sc. (Chemistry)	8-10 years relevant experience in Chemical Lab relevant experience	1	Yes
2	Chemist	B.Sc. (Chemistry)	3-4 years relevant experience in Chemical Lab relevant experience	5	-
3	SWTP DCS Operator	BE/Diploma (Mech)/ B.Sc. (Chemistry)	3-4 years relevant experience in WTP DCS Operation experience	9	-
4	RO Plant Operator	Diploma (Mech)/ B.Sc. (Chemistry)/ ITI	5-6 years relevant experience in SWRO Operation experience	7	-
<b>I. Millwright / Workshop group</b>					
1	Millwright/ Workshop	Graduate/Diploma/Suitable	2-3 years relevant experience	1	-
2	Support functions	Graduate/Diploma/Suitable	2-3 years relevant experience	5	-

### Total indicative manpower list:

Note: Above is only an indicative list of manpower required. The successful bidder must ensure smooth operations and maintenance of the plant as described in the detailed scope of work. For the same, if extra manpower is required, the successful bidder is expected to ensure sufficient manpower without any cost burden on the Owner.

1. The successful bidder shall depute required manpower as directed by EIC. Manpower shall be deputed in Night Shift/Sunday/Holidays consisting of supervisors, fireman, Helpers etc. for any emergency job that may come up at night/Sunday/holiday.
2. The successful bidder is required to provide sufficient manpower considering requirement of weekly off as per labor rules & also taking care of factors of absenteeism due to sickness/leave to ensure availability of nine persons per shift.
3. The above qualification and experience shall be required for all the manpower.

4. Any person, supervisor and above shall be taken only after due technical assessment from the Owner.
5. No person must be relieved from site, without competent-suitable reliever and approval from the Owner.
6. Manpower requirement for AC systems will be on need basis to complete the required job.

## **Annexure 6: Safety and Environmental Guidelines**

Safety guidelines:

1. The O&M Partner is responsible for ensuring the Safety of his employees/ sub-contractors' employees.
2. Smoking and consuming alcohol inside the plant and entering the Site after consuming alcohol is strictly prohibited.
3. Wearing loose clothing is strictly prohibited inside the plant.
4. The Company requires that work to be done in accordance with statutory safety provisions and not exposing the employees or property to unacceptable risk.
5. At all locations within the plant, safety rules including Cardinal and Critical safety rules, Safe Critical behaviors with respect to Behavior Based Safety, Standard Operating Procedure (SOP), Standard Maintenance Practice (SMP), all communications given by Safety department, etc. shall be followed and O&M Partner is accountable for compliance to the same.
6. O&M Partner having poor safety records, not abiding to the safety rules and regulations will be listed and will not be encouraged in future.
7. O&M Partner should consult with the respective Safety officers and Owner's Responsible Person on all the safety issue.
8. Contractor should designate a supervisory person to be the safety coordinator for the work while on Site.
9. If a Contractor or Sub Contractor employs more than 30 workers on Site, then the Contractor/Sub-contractor must appoint a dedicated Safety Supervisor with Diploma or Degree in any discipline and having one year certificate/diploma/degree course on Industrial safety from reputed institute and to pass Owner's selection criteria.
10. O&M Partner should ensure safety by
  - a. Checking and providing standard Safety PPEs,
  - b. Delivering PEP talks and Training,
  - c. Making employees attend the job-specific training.
  - d. Maintaining safety records and all the aspects covered in score card.
11. All the unsafe acts, unsafe conditions and incidents including near miss to be communicated by the O&M partner to their respective in charge or respective Safety Officer's immediately.
12. O&M Partner must ensure following Owner's safety initiatives and active participation in driving and executing the same.
13. O&M Partner must ensure that their supervisors are attending all Safety meeting without fail and communicate their concerns at all times.
14. The execution of work assignment shall be in accordance with recognized safety procedure of the Site. O&M Partner and his employees working at site without adhering to safety norms can be stopped and necessary steps will be taken.
15. O&M partner must not handle the equipment or the task without the proper knowledge about the concerned.
16. O&M partner are responsible to maintain their entire work area in good condition as per Owner's requirement. Any damage to the property and spoiling the surrounding will lead to any penalty/ action as decided by Owner.
17. O&M partner's equipment regular maintenance can be carried out in O&M partner's designated area. No other jobs like fabrication or welding should be done in the shed area.

Any unsafe act done in the shed area thereby affecting the safety of co-employees, property or others and surrounding will be viewed seriously and action can be taken at the point of knowing about such deviations.

18. O&M partner must observe & follow the instruction provided in the safety sign boards and caution boards provided inside the Site in the interest of safety.
19. All O&M partner's drivers driving any vehicle must maintain speed limit of 20 Km/hr. and in the case of TRX 1550/F 15, Forklift, Crane, and Man lift, 7 km/hr. speed is to be maintained. Convex mirrors to be viewed during walking and driving.
20. O&M partner shall ensure that the equipment/ electrical installations/ system facilities provided by him should fulfill the relevant standards criteria.
21. O&M Partner shall ensure periodical testing/ examination of the equipment (Portable electrical equipment like drilling machine, grinding machine, etc.) wherever required in accordance with the provision of various legal requirements including but not limited to Factories Act in addition to SOP set by Owner.
22. O&M partner shall ensure testing of lifting equipment, tools and tackles, safety harness by competent person as per the frequency specified in Factories Act and SOP set by Owner and its record to be maintained.
23. Portable electrical equipment is to be tested and certified by Electrical department before usage and periodical inspections to be get it done from Electrical department.
24. O&M partner shall use only Three Phase Welding Machine inside the Site. They shall ensure welding cables are in good condition and earthing cable must be laid up to the place of Works along with fully insulated IS or International Standard welding holder. Welding cables should not have any joints. Welding safety check list is to be filled in and hot work permit is to be taken before each welding work.
25. O&M partner shall ensure all grinding machines and rotating equipment are having 360 degrees guarding. They shall ensure the quality of grinding wheel/ cutting wheel as per IS/ International standards and wheels shall be marked with expiry date and maximum speed.
26. Gas cutting sets shall be provided with Flash Back arresters as per the Indian or European standards like IS 11006, BS: 615, ISO 5175 class 1, etc. on both cylinder side and torch end (two numbers each) and cylinders are to be procured from authorized persons fulfilling the requirements under Gas Cylinder Rules and Factories Act. All gas cylinders are to be provided with Valve Caps. Trolleys/ pallets are to be used for the transportation of cylinders. Cylinders should not be handled horizontally or by rolling or by carrying manually or by hydra or crane or forklift or battery car, etc.
27. O&M partner shall ensure, electrical cables are double insulated and quality one. Jointing in the cable to be done with adequate insulation and kits only.
28. O&M partner shall ensure earthing of equipment/ systems as per requirement in Factories Act and IE rules. All extension boxes used by the O&M Service Provider shall be provided with 30 mA ELCB/RCBO.
29. O&M partner shall strictly follow the SOPs communicated by Owner.
30. 100% training attendance with compulsory attendance on specified topics required for the O&M partner's employee to be ensured.
31. O&M partner and his employees should be aware of the Emergency Preparedness and Response Plan of the Site and must react accordingly in case of Emergency.

32. All the above safety guidelines are to be followed by O&M partner and their employees at Site. It would be sole discretion of Owner to take any action on the O&M Service Provider if any of the above guidelines are violated at any point of time.
33. O&M partner should ensure that all work activities are carried out only under effective supervision.
- a. Good Housekeeping standards are to be ensured at work site, Container, and office area.
  - b. Handling of chemicals and heavy materials is to be done as per safety norms and with direction from the in charge.
  - c. No Chemical must be brought inside without appropriate TREM CARD or MSDS (Material Safety Data Sheets)
  - d. No chemical shall be used by the O&M Service Provider without knowing its hazards, risks, emergency preparedness and disposal plan.
  - e. Must comply with safety regulations and ensure that the employees deployed by him under his contract wear all Personal Protective Equipment (PPEs), Uniforms or full sleeve (coverall) and adopt safe work practices.
  - f. It shall be the responsibility of O&M Service Provider to ensure that all his employees are using the PPEs without fail.
  - g. The O&M partner shall maintain records of PPE inventory, plan for timely procurement defining basis on Min-Max stock & auto ordering system, Issuance of PPE as per the instructions received from Owner.
  - h. Personal protective equipment as required by the Factories Act and mutually agreed along with Owner shall be provided by O&M partner at his own cost. In case of factories act does not specifically mention about PPEs, then the PPEs prescribed by Owner to be provided as per Indian or International standard as per the below indicative list:

<b>S No.</b>	<b>Personal Protective Equipment</b>	<b>Application/ Protection</b>	<b>Standard/ Approval</b>
1	Helmet	Head Protection	IS:2925/ EN:397
2	Safety Goggles	Eye Protection against mechanical impact	IS: 5983/ EN:166
3	Over the Spec Goggles	Eye Protection against mechanical impact	IS: 5983/ EN:166
4	Ear Plug	Ear Protection against high Noise	IS:9167/ EN:352
5	Earmuff	Ear Protection against high Noise	IS:9167/ EN:352
6	Safety Shoe	High ankle Foot Protection with fiber (electrical)/composite toe	IS:15298

7	Cotton Knitted Gloves	Hand Protection	IS:6994/ EN:420
8	Safety belt with double lanyard	Fall Protection	IS:3521
9	Fall Arrestor	Fall Protection	EN:362/ EN:353-2
10	Welder Shield	Helmet attachable welding shield lens made of clear high impact resistant Polycarbonate,	ANSI/ISEA Z87.1 (2010)/ EN:166 for Lens EN:175 for Helmet
11	Face Shield (for Electrical Flash)	Arc Flash Protection Face Shield with chin cup and front brim hard hat 10 Cal/cm <sup>2</sup> ATPV rating when used with the included chin cup 8 Cal/cm <sup>2</sup> without the chin cup, 7.5" x 20" viewing area, Extra light tint .06" thick Absorbs >99.9% of harmful UV radiation, Resistant to fogging	ASTM F2178
12	Safety Goggles (Splash Proof)	Eye Protection against Chemical Splash	ANSI/ISEA Z87.1 (2010)/ EN:166
13	Safety Goggles (for Welding)	Eye Protection against welding ray	EN:175
14	Cut Resistance Gloves	Hand Protection against cut (during handling of sharp objects)	EN:388
15	Leather Gloves	Hand Protection against heat during fabrication jobs	EN:388
16	Acid Alkali Gloves	Hand Protection against Acid & Alkali	EN:374
17	Neoprene Gloves	Hand Protection against Solvent	EN:374

18	Heat, cut & Chemical Resistance Gloves	Hand Protection against Heat & cut and at the time of Chemical Spillage	EN:374/ EN:388/ EN:407
19	Anti-Vibration Gloves	Protection against Vibration Hazard (during Operation of Jack Hammer, Vibrator, drilling machine, etc.	EN:388
20	Electrical Gloves	Protection against Electrical Shock Class-0, Voltage-1KV, Class-1, Voltage-7.5 KV, Class-2, Voltage-17 KV, Class-3, Voltage-26.5 KV, Class-4, Voltage-36 KV	EN:60903/ IS:4770/ ASTM D120
21	Half Face Respirator	Protection against dust	EN:149
22	Half Face Respirator	Protection against Organic Vapour	EN:149
23	Half Face Respirator	Protection against Welding Vapour	EN:149
24	Half Face Respirator	Protection against Nuisance Odor/ Painting	EN:149
25	Full Face Respirator with multi gas Filter	Protection against Organic/ In-organic/ Acid/ Ammonia Vapour	EN:136/ EN:141/ EN:143/ EN:371
26	Fire Escape Mask	Smoke escape breathing device (mask) with filter assembly, soft mouthpiece hood & visor all in one set. Durable, fire resistant, flame retardant— Polychloroprene latex hood resists temperatures up to 200C, meets fire resistance requirements of	EN:403

		<p>NFPA 701, visor resists temperatures up to 150 deg.C.          COGO-Complete protection from smoke and Carbon Monoxide          State-of-the-art filtration unit contains multi-layer activated impregnated charcoal for maximum absorption and catalyst for Carbon Monoxide oxidation.</p>	
27	Dust and Chemical Protective Body Suit	<p>Chemguard Suit is a three-piece design suit Made from Poly-Ethylene coated substrate quality fabric with Zip and Velcro.          Seam sealed          Design: Coat / Pant / Hood.</p>	<ul style="list-style-type: none"> <li>• Type 3 EN 14605 Liquid tight suits</li> <li>• Type 4 EN 14605 Spray tight suit</li> <li>• Type 5 EN ISO 13982-1 Dry particle suit</li> <li>• EN14126 Barrier to infective agents</li> <li>• EN1073-2 Barrier to radioactive particulates – Class 1</li> <li>• EN1149-1 Anti-static</li> <li>• Chemical permeation testing according to EN 369, EN 374-3, EN ISO 6529 or ASTM F 739</li> </ul>
28	Hot Liquid	<p>Hot Liquid Protection Suit.          For Online Leak Arresting (Steam) - Body protection</p>	ISO 15025/

	Protection Body Suit	the fabric will offer protection against hot liquid splash of temperature up to 350 deg.C.	EN:388
29	Arc Flash Suit, Hood & Gloves (LT)	Electrical Arc Protective Suit Specs: Electrical Arc Protective Suit Pro- wear kit 8 Cal/cm, ARC FR Treated Cotton Clothing consisting of Coat, Pant, Hood & Gloves ARC 8 Cal/Cm2, Category HRC-2 as per NFPA 70E	Single Fabric System Meets ASTM F 1506-02a. & NFPA 70E EN 61482-1-2
30	Arc Flash Suit, Hood & Gloves (HT)	Electrical Arc suit 100 Cal/cm2 OR 40 Cal/cm2 Specs: Arc flash pro-kit 40 Cal/cm * ATPV ratings of 40 Cal/ cm2 * Gloves are sewn with Nomex® thread. * 40 CAL/CM2 - 13 oz./yd2 (441 g/m2) over 5.5 oz./yd2 (186 g/m2) * Indura Ultra Soft material	Certification: CE 0120 Standards: IEC 61482-1 & IEC 61482-2
31	Fire/ Heat proximity protective Body suit	Aluminized Two Layered Fire Proximity Suit. Protects wearers from industrial radiant heat up to 800 deg.C The outer layer of the suit is made of thick aluminized fiber glass fabric as outer layer and a fire-retardant comfort layer	EN:531

		inside "KEHZLAR" thread for fire resistance and strength.	
32	Safety Net	Fall Protection	IS 11057
33	Horizontal Rope Anchorage Line System	Fall Protection	EN:795
34	Vertical Anchorage Line System	Fall Protection	EN:353
35	Disposable Protective Cover all Type 5/6	Protection against Duct/ Chemicals	ISO 13982-1/ EN 13034
36	Boiler Suit	Body Protection	EN 531
37	Gum Boots	Foot & Leg Protection	IS:5677
38	Reflector Jackets	Visibility	EN 471
39	Face Shield	Face Protection	IS 8521/ EN 166

AREA / JOB	PPE SUGGESTED (IS, EN Standard)
All Area	Safety Helmet with Chin strap, Safety Shoe, Goggles, Ear Plug, Earmuff, Hand Gloves, uniform, coverall or full sleeve shirt and Pant.
Water Treatment Plant	Safety Helmet with Chin strap, Safety Shoe/ Gum Boot, Acid splash Goggles (Compulsory), uniform, coverall or full sleeve shirt and pant Ear Plug, Full Acid Proof Suit with hood & Nitrile gloves
Plant Area	Safety Helmet with Chin strap, Safety Shoe, Goggles, Ear Plug, Earmuff, Job specific hand gloves, coverall, uniform or Full sleeve shirt and pant.
Work at height of more than 2m	Full Body Harness with shock absorber, Double lanyard (1.8m) & PPEs relevant to the area as mentioned above
Gas cutting	Cutting goggles, Full hand leather gloves, Face shield and PPEs relevant to the area as mentioned above.
Welding	Welding Shield with helmet (Welding glass shade 6 to 12), Full Hand leather gloves and PPEs relevant to the area as mentioned above

Note: PPEs mentioned above are minimum indicative, all other PPEs required as per SOP, Job Safety Analysis (JSA), Specific requirements, Changes in the Safety regulations and guidelines are in O&M Service provider Scope.

The O&M partner shall indemnify Owner for any penalty imposed by any statutory/ regulatory body in connection with any safety violations under these guidelines and/ or under relevant statutory requirement.



#### Environmental Guidelines:

1. The O&M partner must comply to all environmental regulations and norms (Applicable Law relating to emissions, discharges, releases or threatened releases of pollutants, contaminants, chemicals, or industrial, toxic or hazardous substances or wastes into environment (including ambient air, surface water, ground water, land surface or subsurface strata) or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of pollutants, contaminants, chemicals, or industrial, toxic or hazardous substances or wastes) set by government.
2. The O&M partner shall adhere to environmental clearance terms & Conditions, Pollution Control norms, maintenance of the equipment for meeting the performance standards as specified by Gujarat Pollution Control Board.
3. The O&M partner shall be responsible for renewal of permit along with technical inputs, data etc. as required for renewal of permits, subject to ensuring compliance to performance standard specified by Ministry of Environment and Forest.