## Tender for appointment of consultant for Basic Design, Detail Design on to act as work engineer for FGD of HNPCL's 1040 MW Thermal Power Plant at Visakhapatnam.

**Plant details**

HNPCL is operating the 2x520 MW Thermal Power Plant at Visakhapatnam, which is in commercial operation since 2016 and the entire power generated from the plant is supplied to Govt. of Andhra Pradesh thru a Power Purchase Agreement with the AP State Discoms. The coal for operations is brought from MCL's Talcher & IB Valley coal mines in Odissa through a Fuel Supply Agreement (FSA) with Mahanadi Coal Fields Limited for 4.625 MT/ Annum. The plant draws sea water through once through cooling water system and meets the plant requirement through Desalination and DM plants.

HNPCL has conducted the system study and has concluded for Sea water based FGD for the plant. Recent MoEF notification dated 11.07.2025 mandates Category A plants to put up the FGD with a period that the must be commissioned by Dec 2027.

**Scope:**

Engineering Consultancy Services for Installation of Sea water based Flue Gas Desulphurization (FGD) Systems for 2 x 520 MW HNPCL plant at Vizag. The Scope of Consultancy and Engineering Services Contract involves the works for installation of Sea water based FGD systems which includes Suggesting Suitable Configuration (either individual or any combination) for 2 X520 MW units, Basic design Preparation & Finalisation of the detailed Techno Commercial Specifications, with Schedule of quantities, data sheets, tender drawings, , tendering assistance, technical evaluation of bids, assistance in finalisation of Contract, Review engineering services, Vetting of technical documents/drawings, Co-ordination of meetings, attending technical & Contract coordination meetings(CCM), Site Supervision, attending third party inspections, review of O&M manuals and witnessing of PG tests and release of as built drawing etc.

Duration of the Contract – Two (2) years from award of the Contract.

Tender Process - Open tender through Domestic Competitive Bidding through (Two Part Bidding) .

Two part Bid:
1) Pre-Qualification & Technical Bid
2) Price Bid

Tender time lines

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| 1 | Schedule<br>Available Date & Time | From 29.10.2025 at 16:00 Hrs onwards |
| 2 | Pre Bid Meeting<br>Date &Time | 04.11.2025, 14:00 PM onwards at Visakhapatnam |
| 3 | Bid Submission Closing Date &<br>Time | 15.11.2025, 15:00 PM |

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| 4 | Pre-Qualification / Tech. Bid Opening Date &Time | 17.11.2025, 15:00 PM |
| 5. | Bid Validity | 180 days from the date of opening of Part – I Bid (Pre-Qualification & Technical Bid) |
| 6. | Commercial Bid Opening Date & Time | Shall be intimate separately. |

**Pre-qualification Criteria:**

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| 1 | **(i) Technical :**<br>• The Bidder must be a consultancy company registered under Companies Act 1956 in India.<br>• Bidder should have proven experience of providing consultancy services which is presently carrying out engineering services as Owner's Engineer in regard to preparation of EPC technical specification, bid evaluation, award recommendation, review of design / detail engineering works for the installation of FGD and other equipment to so as to alliance the desired emission levels of particulate matter and Gases as per latest revised norms of MOEF & CC for at least one coal in last 5 years thermal power plant unit of capacity not less than 200 MW and above in India/abroad.<br>• Bidder shall have adequate engineering workforce with requisite experience in India to carry out the engineering consultancy services required for the above work. Bidder shall submit list of technical personnel available with the company.<br><br>**(ii) Financial :**<br>Bidder should have adequate financial capacity and resources to meet the financial obligations pursuant to scope of the works covered in the bid document. The bidder should submit copies of profit/loss account & balance sheet for the last (immediate) three years duly certified by the practitioner CA.<br>• Average Annual financial turnover of bidder during the last 3 consecutive financial years, ending 31st March of the previous financial year, should be more than Rs.50 Cr<br>• The Bidder should have a positive Net Worth as per the latest audited financial statements individually for the last three years. |

**Bid submission and evaluation:**

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| 1 | The bidder should provide all copies of the information uploaded by him so as to receive the tender inviting authority within in the stipulated date as communicated by the tender inviting authority.<br>If the submitted copies documents are found to be fake/defective/manipulated, at a later date, the bid security will be forfeited and bidder will be blacklisted. |
| 2 | Bid will be evaluated on the basis of the final price after negotiations. |

PROJECT INFORMATION

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| 1. | Project | Hinduja National Power Corporation Limited | | |
| 2. | Plant Capacity | 2 * 520 MW | | |
| 3. | Location | Palavalasa Village, T.Devada Post, Steel Plant (Sub office), Pedagantayada Mandal, Visakhapatnam-530031, Andhra Pradesh India | | |
| 4. | Nearest City | Vishkhapatnam | : | 40 km |
| 5. | National Highway | The site is approachable from NH | : | 21 km |
| 6. | Nearest Railway Station | Visakhapatnam | : | 40 km |
| 8. | Nearest Airport | Visakhapatnam | : | 20 km |

Scope of Work

**1.0** The Scope of Engineering Consultancy Services to be rendered by the consultancy firm for the subject projects (installation of Sea water based FGD systems for Hinduja national Power Corporation Limited 1040 MW (2 x 520 MW) at Visakhapatnam .

*i)* The Consulting Engineer shall submit the suitable Configuration (either individual or any combination) of Sea water based FGD system for 2 X 520MW units duly considering techno commercial aspects and accordingly the Consulting Engineer shall prepare FGD layout plan, Preparation of Pre- Qualification requirements & Detailed specification for the Total EPC package for installation of Sea water based Flue Gas Desulphurisation (FGD) systems in consultation with HNPCL .

ii) Preparation of technical specifications as mentioned in item no. (i) above, includes the following.

1. Detailed technical & general requirements.
2. Drawings & layouts.
3. Environmental protection systems & devices required as per the norms in vogue for ambient air quality, effluent quality, hazardous wastes etc.,
4. Specifying the relevant standards for construction, erection, testing and commissioning, acceptance testing and take over.

5. Specifying the relevant standards for civil work.
6. The preparation of specifications for the project / Unit is to be done in accordance with the respective "Detailed Project Report" available with HNPCL. A soft copy of Compilation of technical data for the plant covering the boiler , coal parameters and present layout for optimised layout.
7. Preparation of comprehensive tender documents

iii) Evaluation of Pre-Qualification bids received from the EPC bidders and submission of evaluation report.

iv) Engineering and designing of all packages of the project for the purpose of tendering only.

v) Assistance in pre-bid meeting including compilation of queries of the bidders & answers thereof.

vi) Providing required & relevant inputs/clarifications etc.,to the qualified bidders

vii) Assistance in post-bid meetings including compilation of queries and providing necessary clarifications to the bidders.

viii) Evaluation of Technical bid and submission of the evaluation report.

ix) Assistance in negotiations with the bidder(s).

x) Site visits to the project have to be made as and when necessary during the contract period.

xi) Assistance in preparation of draft "detailed purchase order" in respect of package.

xii) Assistance in providing analysis / preparation of reports in case any complication/legal problems arise during the course of pre-bid / post-bid periods and also during the entire EPC contract period.

xiii) To study and review in detail the Engineering, Design, features and scope of supply of the plant and equipment to be supplied by the contractor.

xiv) To review and approve the vendor drawings and data duly considering the comments of HNPCL also.

xv) The consultant will be responsible to coordinate the Civil, Electrical, Mechanical and Instrumentation works of the project, proper scheduling & coordination of works and suggest modifications wherever necessary in the interest of overall, progress, soundness, and quality execution of the project.

xvi) The consultant will be responsible for satisfactory coordination of engineering and design with equipment vendors, contractors and erection agencies for overall project design, execution, erection & Commissioning.

xvii) The Consultant will be responsible for supervision to ensure compliance with the requirements of the specifications and proper scheduling and coordination of the work of all the contractors at site.

xviii) The consultant shall depute a engineer having sufficient experience for the site as construction superintendent supported by resident engineers viz., resident mechanical engineer, resident civil engineer, resident electrical engineer and resident instrumentation engineer to site for enabling effective quality control in the various construction specialties. Both the construction superintendent and resident engineers shall be deputed to site with the consent and approval of HNPCL.

xix) The Third Party Inspection Services of the various equipment's at vendor works is to be provided by the consultant, whenever requisitioned by HNPCL.

xx) The Inspection services, including the Third party inspection services in India and overseas based on the man day / Man Month rates

- Revie of O&M Manuals
- Witnessing of project
- Preparation of as buit drawings

xxi) To attend the coordination/review/engineering meetings to be held at the project site, HNPCL headquarters or any other place in India decided by HNPCL from time to time.

xxii) To assist in conducting performance & acceptance tests and due review, evaluation & certification of the test results thereof.

xxiii) Training is to be imparted to at least three HNPCL engineers at the consultant's office for a period of one month in design & performance evaluation aspects of similar capacity thermal projects.

xxiv) The Vishakhapatnam site Office shall be fully empowered to attend to all the works required to be carried out for smooth, efficient and timely completion of the projects.

xxv) Any other queries for regulatory approval

xxvi) Division of Work

The Consultant shall, among others, be responsible for equipment, systems and elements partly or in total exposed to or affected by the plant's advanced super-critical steam parameters. The Consultant may handle all the aspects of the Project and in case needed can hire Expert(s). The Consultant shall elaborate division of work between him and the Expert(s) but this practical division of work shall not affect the overall responsibility of the Consultant and the Consultant alone would be solely responsible for entire scope of work. The systems / sub systems to be covered in the scope of Bidder are indicated in the following table. Any System or sub system that is not specifically mentioned but necessary for the plant is deemed to have been included in the Bidder's scope for completeness of the Project. The Consultant shall furthermore develop bid evaluation guidelines and prepare the bid evaluation report.

Duties of Consultant

It is not the intention to specify and outline completely herein all the minute details for the services. All items which are required to be reviewed and vetted for the integrated working of the proposed FGD plants as a whole are deemed to be included in the scope of services whether specifically mentioned or not. The consultants shall render all the necessary and comprehensive services required in every respect to ensure smooth and timely completion of the project.

The following clauses detailing the duties of the consultants are applicable to
though not specifically mentioned therein.

The Consulting Engineers shall assume full responsibility for review of Engineering adequacy, quality, coordination and timely completion of designs, construction, startup, commissioning and all other activities in the execution of the project. The Consulting Engineers shall be fully responsible for the review of designing and engineering of all general, civil, electrical, and mechanical and instrumentation aspects and other areas. The duties of the consultants are briefly described as follows:

1. Immediately upon award of the contract, the Consulting Engineers shall depute senior experienced technical Executives to HNPCL site. Visit the site, Study the possible techno commercial combinations for FGD installation and Suggesting Suitable Configuration (either individual or any combination) for 2X520 MW units. They have to examine the existing data relating to SOx emissions, fuel and water supply, construction power supply, transportation, soil conditions, existing infrastructure / facilities and potential constructional difficulties. They will evaluate the various alternatives presented by these & other pertinent facts and will present written conclusions & recommendations on the proposed FGD installation within 4

weeks from date of award of contract.

2. Visit the site and prepare site plan showing contours, Flue Gas System, Absorber System,, Waste Water Treatment System, Process Water System, , electrical sub-station, station approach road, security facilities, repair shops, drainage system for the proposed FGD plant etc. Consultants shall prepare alternative plant layouts and plot plans for study. Inter connection and integration with the existing systems shall be ensured while laying out the proposed FGD installation.

3. To study and review in detail the Engineering, design features and scope of supply of the plant and equipment.

4. The consultants shall also carryout basic studies in respect of various systems and prepare basic engineering and conceptual designs for the same.

5. To prepare technical specifications and draft enquiry documents for the supply & erection of all the FGD plant, equipment and material which are necessary for completing the project in all respects within the scheduled time frame. The technical specifications and enquiry documents for civil works will also be prepared by the consultants.

6. Scope of supply in specification shall clearly delineate the terminal points and shall be well defined.

7. The specifications shall conform to good modern design practice, employ acceptable standards and material of construction and the equipment specified should be functionally adequate and suitable for the equipment.

8. The specifications should be complete in all respects, technically comprehensive and should cover the complete requirements of the system without any spillover for later procurement and the quantities of material specified should cover the complete requirements of the plant and equipment during the execution of the projects.

9. The specifications, in respect of equipment considered to be imported, if any, shall be prepared on international standards.

10. The specifications shall specify the essential spares, critical spares and major spares required for three years operation of the plant.

11. Specifications and plant layout drawings shall be prepared in such a way that the project is executed economically and recurring costs are kept down.

12. The preparation of tender drawings and specifications should be done with the utmost care, expedition and promptly furnished to HNPCL.

13. The designs and specifications are to be drafted by the consultants duly taking into account the existing units with their entire plant & equipment and planning is to be done in such a way that the execution of works on the proposed FGD installation for HNPCL (2* 520 MW) will not interfere with any of the systems for existing units in operation.

14. To study and evaluate the offers received technically and economically and make recommendations to HNPCL within the time schedule mentioned in section-6. Where a composite tender for civil, electrical and mechanical works is invited, the consultants shall furnish their analysis for the complete tender including civil works. The analysis for all the tenders shall be submitted in 5 copies. In case where confirmations/clarifications on technical details are necessary from the bidders, these shall be obtained directly only once by the consultants with copies to HNPCL. While furnishing the analysis the consultants shall load for all the technical and commercial deficiencies apart from giving the final list of confirmations/ clarifications still to be obtained from the bidders before placing the orders. Where the lowest offer is not recommended for acceptance, the consultants shall furnish a list of deviations from the specifications giving reasons why these are not acceptable.

15. To prepare equipment layout drawings for the plant showing the location of all mechanical and electrical equipment and machinery inside the buildings on different floors and also equipment locations in respect of all systems for tendering purpose.

16. The basic engineering and conceptual designs for various equipment, schematic diagrams, general arrangement and equipment layout drawings are to be vetted by their collaborators, if there are any.

17. Design know-how and training with foreign collaborators: The consultants shall provide training to three engineers of HNPCL at their office at their cost for a period of one month in design, operation and maintenance aspects of FGD system of similar capacity thermal station. The consultants shall also arrange a visit of these engineers to a similar plant engineered by them in India and fully acquaint the engineers with the design features, erection practices and operational methods.

18. CIVIL WORKS:

The detailed design in respect of Civil Works including the upper structures, inter flooring, foundations of all the structures coming within this area shall be reviewed and vetted by consultants and released for construction. The review of design works includes all the foundations and those of trenches, channels surface and underground drainage and equipment's that may be necessary for successful commissioning of FGD.

Review and Vetting of Design of complete civil, structural, architectural & building service works for miscellaneous plant buildings & other indoor/outdoor facilities as included in this Package for the Flue Gas Desulphurisation Plant as required. The services shall include to optimize the space and integrating the control panel to the main control room.

19. To prepare flow diagram which will show the basis of designs and pipe sizes for the entire power station in accordance with up to date engineering practice which includes main steam, cold reheat, hot reheat, bleed, feed water discharge and suction, condensate, vents, drains, air evacuation, service water, potable water, lube oil, fuel oil and light oil, control air, steam tracing and heating, auxiliary steam, water treatment system, circulating water system, compressed air system, boiler feed water, condensate cooling water system, firefighting system, chemical feed, bearing cooling water, make up, gland seal, coal and ash handling.

20. To prepare dimensional drawings showing the layout of all the piping work and also schedules and bill of materials for the pipes, fittings, flanges, bolts, nuts, gaskets, valves, traps, strainers and other specialties, drains, logging for all the piping systems and logging for main and all other equipment for bid purpose and also for erection purpose. The piping contractor will have to carry out the erection as per the erection drawings furnished by the consultants. The isometric drawings and the fabrication drawings (based on the layout of the station) for all the piping systems shall be prepared and finalised by consultants in coordination with all contractors/suppliers.

21. The consultants shall review the design and location of hangers and supports for all the piping. While reviewing the piping supports the consultants shall also see that the stability of the civil structural members from which the pipes are supported is ensured irrespective of the size of the pipes.

22. To review all electrical and pneumatic drawings of instrumentation, control equipment and panels required for FGD system. The drawings shall include the schematic drawings, wiring diagrams, cable schedules, armor tube schedules, inter connection drawings, layout drawings of all tubing impulse lines, supply air lines and all other pipe lines, instruments etc. The schematic and layout drawings of the control air system for the entre FGD system shall also be furnished. These drawings shall be complete for procurement and erection of the instruments, control equipment and panels, required for the entre FGD system

23. To review air conditioning and ventilation arrangement drawings.

24. To review special equipment supports, their operation platforms and stairs, where required.

25. To prepare electrical single line diagrams for 11 KV and 415 V auxiliary power system, D.C., system and communication system etc.

26. To review schematic diagram of interlocks and protection for the entre FGD system/plant.

27. To review the layout drawings of all power and control cables, conduits, cable trays, cable trenches, schedules, grounding system, station lighting system, telephone and communication system.

28. To review cable and conduit schedules for power and control cables. If any wiring diagrams, interconnection diagrams etc., are required to be got from any of the suppliers, the consultants shall closely pursue with the concerned to get the required data and drawings in time.

29. To review control schematic and interconnection drawings (wiring diagrams) of FGD plant electrical equipment and instrumentation and control equipment including interlocks and protection.

30. To review bills of material for power and control cables, grounding cables and accessories, lighting materials and plant communication equipment. The lighting system for the FGD plant shall be designed and bills of material for the same shall be furnished.

31. The consultants will be responsible to coordinate the civil, electrical, mechanical and instrumentation works of the project and suggest modifications wherever necessary in the interest of overall soundness of the project and keeping in view the schedule of commissioning of the plant.

32. To prepare interference drawings, to check the interference and suggest modifications if any, for FGD plant piping, equipment, structures, cables conduits, cable trays, cable trenches, and road crossings etc.

33. To review and approve the vendor drawings and data after taking into consideration the comments of HNPCL and furnish data and clarifications sought by the vendors. The approval/ comments should be furnished direct to the vendor with copies to the purchaser within 15 days of the receipt. Likewise the consultant's comments on references made by HNPCL/Contractors shall be complete and furnished within 15 days of receipt.

34. To be responsible for satisfactory coordination of engineering and design with equipment vendors, contractors and erection agencies for overall project design.

35. Project Monitoring:
To plan all civil, electrical, mechanical and instrumentation works to ensure coordination of manufacture, delivery, erection, testing & commissioning of the project. The consultants shall prepare detailed schedules using critical path method showing preparation of specifications and drawings, bid invitation, ordering, manufacture, vendor drawing review, shipment and delivery, civil works commencement and completion dates, erection, testing, commissioning,

performance testing and preliminary operation. The consultants should review and revise the schedule on a regular periodic basis preferably on a monthly basis during erection and it may be reduced to weekly review during commissioning and as frequently as necessary during the progress of the projects and report any delay that may occur with recommendations for remedial action to be taken.

A master PERT network shall be prepared initially along with detailed PERT network for each individual item. These shall be reviewed and revised as frequently as possible but not less than once in three months in the initial stage. Any slippage shall be brought to the notice of the HNPCL indicating remedial measures. Financial oriented bar charts shall also be prepared to enable the inflow of funds suitable for the programme.

The consultants should prepare check lists of:

a) Drawings and data to be furnished by the suppliers indicating the dates by which these are required.

b) Items of equipment to be supplied indicating the sequence and dates by which these are required.

c) Sequence in which execution of works to be done indicating time schedules against each.

d) Missing items/components not received at site which will delay erection works.

36. Within three months upon completion of construction of the proposed FGD plants, the consultant shall review the As Built drawings submitted by the FGD plant main EPC contractor.

37. To advise for a period of one year from the date of commissioning of the unit any prompt and expeditious corrective measures that may be required for its proper operation and maintenance.

38. To submit to the HNPCL a final consulting Engineering report and engineering certificate to signify acceptability of the project within six months from the date of commissioning of FGD plants

39. To prepare and submit to HNPCL a monthly report of the Consultants activities, works pending with them with likely dates for attending to them, and a summary of the status of project procurement. Equipment deliveries and construction and commissioning works together with the list of bottlenecks affecting the project progress.

40. The Consulting Engineers shall furnish to HNPCL free of cost, the following drawings, specifications, schedules prepared by them. .

a) Two copies of the draft specifications along with soft copy shall be furnished.

b) Four copies of the final specification including drawings and schedules along with the soft copy both in word document form and PDF form shall be furnished.

c) Six copies of final consulting engineering report of the projects with 2 soft copies

41. To perform any other miscellaneous services that may be necessary in connection with the planning, design, construction, expediting, start up, commissioning and maintenance of the plant.

42. To attend coordination and review meetings at HNPCL head office, at project site or any other place designated by HNPCL.

43. To depute experienced personnel to witness manufacture and tests at the contractors or sub-contractors works and to certify that the equipment complies with the specification and approved drawings in all respects. Non-compliance is to be promptly reported to HNPCL with consultant's opinion.