



Industrial Energy Limited

OWNER:

INDUSTRIAL ENERGY LIMITED

PROJECT MANAGER:

INDUSTRIAL ENERGY LIMITED

PROJECT:

**Cooling Water Chemical Treatment Job to be Performed at IEL Kalinganagar Power Plant
for 3 years**

TENDER REF: (CC27ADKPO-07)

**Cooling Water Chemical Treatment Job to be Performed at IEL Kalinganagar Power Plant
for 3 years**

EXPRESSION OF INTEREST (EOI)

Cooling Water Chemical Treatment Job to be Performed at IEL Kalinganagar Power Plant for 3 years

Enquiry reference no.: - CC27ADKPO-07
Cooling Water Chemical Treatment Job to be Performed at IEL Kalinganagar Power Plant for 3 years
Type of Bidding: E-tendering / Two Part
Contact Details: Mr. Arunava Das – Group Head-Contracts & Store, Mobile- 9099006572, Email Id:- arunava.das@tatapower.com Ms. Prabhakar Rao -Head Contracts & Materials, Mobile: 9223381531, Email Id:- urprabhakarrao@tatapower.com Industrial Energy Ltd. C/O - The Tata Power Co. Ltd., Inside of Tata Steel Ltd., Kalinganagar, Jajpur , Jajpur Road , Duburi-755026, Odisha

Industrial Energy Limited (“Owner”) invites Expression of Interest (EOI) from interested parties for the Two-Part e-Tendering Process of following Relevant Package:

Plant Details	Description	Tender Fee	Bid Security (EMD)	Estimated total package value
Industrial Energy Ltd. C/O - The Tata Power Co. Ltd, Kalinganagar, Jajpur , Jajpur Road , Duburi-755026, Odisha	Cooling Water Chemical Treatment Job to be Performed at IEL Kalinganagar Power Plant for 3 years	INR 2,000/-	INR 1,26,000/-	Rs. 1.26Cr/-

INTRODUCTION:

Industrial Energy Limited (IEL) is the JV (Joint Venture) of TATA POWER & TATA STEEL, it was formed for Generation and supply of power and process steam by utilization of waste gases from Blast furnace and coke oven of TSL plant at Kalinganagar.

Site Name	67.5 MW X 3 units - IEL, Kalinganagar
Owner	Industrial Energy Limited
Project Manager	Industrial Energy Limited
Site Location	Industrial Energy Ltd. C/O - The Tata Power Co. Ltd., Inside of Tata Steel Ltd., Kalinganagar, Jajpur , Jajpur Road , Duburi-755026, Odisha, India
Nearest Railway Station	Jajpur Keonjhar Road, Odisha. Appx. 21 kilometres from TSL Kalinganagar plant.
Transport Mode	Rail/Road. Nearest Airport at Bhubaneswar. Appx.120 km away from plant location and guest house.

1. Brief Scope of Work:

A. DETAILS OF EXISTING COOLING WATER SYSTEM

Cooling Towers:

	Unit #1	Unit # 2	Unit #3
Circulation Rate (M ³ /hr.)	13600	13600	13600
System Volume (M ³)	17500		
Target COC	7		
Delta T (°C)	9- 10		
Evaporation Rate (M ³ /hr.)	300 - 350		
Blow down rate (M ³ /hr.)	50-100		
Make up rate (M ³ /hr.)	330- 430		

Blow down:

The cooling water blowdown is taken from the condenser return line.

Chlorine and Acid dosing system:

Following dosing systems are available for all the cooling water systems from user end:

- (a) Sulphuric acid (98%) (b) Sodium Hypo Chlorite (10 - 12%W/V)
- (c) Acid & Hypo unloading pumps, ultrasonic level transmitters on all bulk chemical tanks
- (d) Realtime Monitoring of H2SO4 Tank Level via PI Server.
- (e) Dedicated Panel room for operating of pump from CWDS room.

Make up water characteristics:

	pH	Sp. Conductivity.	Turbidity	Total Hardness	Ca H	Mg H	Chloride as Cl	Silica as SiO ₂	Iron	M. Alk
Unit	-	MicroS/Cm	NTU	PPM	PPM	PPM	PPM	PPM	PPM	PPM
Minimum	7.2	140	3	54	40	14	10	10		54
Maximum	8.45	240	11.5	68	50	18	26	24		72
Average	8.03	170	6.2	56	45	15	13	14		64

B. TECHNICAL REQUIREMENTS OF PROPOSED COOLING**WATER TREATMENT PROGRAMME:**

IEL requires vendors shall have to provide non-chromate, ortho-phosphate- Zinc, based cooling water treatment packages for the cooling towers. The cooling water treatment shall comprise of Zinc as the cathodic inhibitor and stabilized orthophosphate as the anodic inhibitor combined as a single formulation. Individual chemicals as cathodic and anodic inhibitors in basic chemical form are not acceptable. The products offered should be field tested and proven.

- A dedicated scale inhibitor- cum-dispersant shall also be included in the programme for Dispersion of iron, general scale, and sludge and to take care of chances of scaling due to operation at high pH.
- Effective control of biological growth shall be provided by using suitable biocide, bio-dispersant together with Sodium Hypo Chlorite.
- Continuous dosing of chemicals by metering pumps
- Vendors should mention the water blow-down after each non-oxidizing biocide dosage at percent of system volume and quantity.
- Chemicals shall be supplied in new HDPE containers. The containers must be properly sealed and also shall be labeled properly with name, brand name, batch no, expiry date etc. Each batch of chemicals must have test certificate that all the chemicals are biodegradable (preferably within 24 hrs), environment friendly and do not fall under banned category
- Total quantity of chemicals, to be supplied by the Vendor, should be adequate for 365 days operation of the plant in a year. Chemicals stock at site should be maintained for 2 months for all chemicals.
- Vendors are advised to visit plant sites and submit proposals only after extensive plant survey, ascertaining quality of makeup, circulating water, blow down, equipment metallurgy etc. Vendor is free to quote chemicals above and above the ones specified in this document to meet the guarantees. No complaints of the vendor shall be entertained after issue of work order.
- Vendor shall provide analytical method of analysis along with active contents, details of Instruments & reagents required for analysis of various Chemicals active content in bulk chemicals & their value, 10 days prior to starting the job.

Corrosion Inhibitor % of Total phosphate as PO₄

% of Zinc as Zn

Dispersant % of Organo-phosphonate

Sequestration value mg/ml (minimum)

Bio dispersant % Active ingredient & physical property**FRC level****Non- Oxidizing Biocide as described**

- Vendor shall provide continuous monitoring system to carry out daily water analysis to monitor the necessary treatment parameters. All analysis related to laboratories shall be provided by IEL in our laboratory by experienced chemists.
- Corrosion coupons shall be assessed jointly by IEL and vendor as per ASTM standards.
- The following microbiological analysis shall be carried out by Vendor in the presence of IEL as per the schedule:

Test	Frequency of testing
Aerobic microbial count (at 22 Deg C)	Once a month
Aerobic microbial count (at 37 Deg C)	Once a month
Cauliform bacteria	Once a month
E.Coli	Once a month
Faecal streptococci	Once a month
LEGIONELLA SPP.	Once a month
Pseudomonas aeruginosa	Once a month
S. aureus	Once a month
Salmonella spp.	Once a month
Shigella spp.	Once a month
Sulphur bacteria (Sulphate reducing bacteria)	Once in a fortnight
Vibrio parahaemolyticus	Once a month
Yeast & mould count	Once a month
TBC	Once in a fortnight

C. Cooling Water Treatment Scheme**a. pH Control**

Treatment program should be designed in such a way that the pH of circulating water in return header is kept within 7.8 - 8.2. pH in circulating water shall not be allowed to go below 7.6 at any time. Vendor shall maintain the same with his treatment and by dosing concentrated sulphuric acid based on site conditions. pH reduction due to microbiological activity should be avoided.

b. Corrosion Inhibitor and Anti-scaling Dispersant:

The treatment programme should be capable of maintaining corrosion rate less than 2.0 mpy on MS, 0.3 mpy on Cu & 0.1 mpy on SS un-passivated sand blasted corrosion coupons manufactured as per ASTM along with MTC, to be supplied by Vendor and shall be installed in return header every month in each cooling tower. Corrosion racks along boxes (with lock & keys) and necessary fittings to be provided by vendor. One additional rack will be available as common spare (standby) for all towers.

The scale inhibitor-cum-dispersant shall take care of chances of scaling due to operation at high pH and high temperature. Procedure for analysis of dispersant in circulating cooling water is essential along with the technical bid. To take care of the adverse effects of higher pH during monsoon season, doses of dispersant are to be maintained on sufficiently higher side to avoid scale formation in critical exchangers

where cooling water is on shell side with low velocity. The dispersant offered should be proven and supporting documents for the same to be provided. In case of some critical exchangers, a need may arise for localized (satellite) dosing of dispersant. The Vendor should be ready with necessary arrangements for the same. Doses of dispersant should be selected accordingly.

c. Micro Biological Control:

- i. Chlorination shall be done continuously or in nighttime only to maintain a free residual chlorine level of 0.2 - 0.5 ppm in return header of each cooling tower.
- ii. ORP should be maintain around +450 - 550mv for 2 – 3 Hours.
- iii. Any excess of chlorine should be avoided due to its harmful effects.
- iv. At least three non-oxidizing biocides are to be recommended by the vendor to achieve the guaranteed figure. Minimum active contents of biocide and ppm dose based on hold up volume for effective bio control.

2. Special Comment: -

1. Service providers has to aligned with Tata Power Quality, environment and safety policy. Any deviation will subject to severe action.
2. Time and Quality is the essence of the contract. The Contractor shall ensure that the overhauling including inspection by IBR authority covered in scope of work will be conducted within 10 days (from manhole door opening to closing) with best of the skill and the know-how available with the contractor and will be carried out in conformance with the clearance and adjustment set forth in the manufacturer drawing / quality requirement and other information.
3. The contractor shall furnish the Actual Bar chart against the planned bar chart for the work to be carried out. Daily monitoring of the work progress shall be done. Vendor has to adhere to shutdown schedule without fails.
4. In case contractor fails to execute the job in accordance with the agreed programme, IEL reserves the right to get it done through other party at risk and cost of the Contractor.
5. Guarantee/Warranty- The work carried out shall be guarantee for FOUR months from the date of commissioning of the system. If any defect is observed in the equipment which can be attributable to poor workmanship, it has to be attended free of charge. For that contractor has to mobilize the manpower when the shutdown is available.
6. Contractor has to keep their key personnel during the start-up/ commissioning of the system /Equipment and shall attend the defect, if observed due to poor workmanship. The contractor key personnel shall remain at site for minimum three days after the commissioning of the system.
7. It is responsibility of the contractor to maintain the housekeeping of the plant, equipment and the surrounding during and after the work.
8. The contractor shall be responsible for shifting of the material /spares from the stores to the site and return of the damaged spare /scrap to designated place. For shifting if lifting equipment is available that shall be provided.
9. All Portable Power Tools & Lifting Tools must have age less than 3 years from date of manufacturers to be used. The Contractor shall be responsible maintaining their tools /tackles/material brought for operation and maintenance work. No payment in any form or compensation, whatsoever, shall be made to the Contractor against any damage, loss and breakdown of such tools & tackles of the contractor.
10. All the Personal Protective equipment shall be complied to required standard & its under scope of vendor. All the full body double lanyard must have age less than 3 years from date of

manufacturers to be used.

3. TENDER FEE & TIMELINES:

- a) Interested parties meeting the pre-qualification criteria specified elsewhere in this document can request Bid Document and participate in the bidding process by submitting their Expression of Interest (EOI) and credentials along with the Tender Fee not later than 21st July 2026. Request for Bid Document/EOI will not be entertained EOI's submitted beyond this deadline may be liable for rejection.
- b) Non-Refundable Tender Fee, as indicated in table above, in the form of direct deposit in the following bank account and submit the receipt along with a covering letter clearly indicating the Tender Reference number

Details for payment of Tender Fee:	
Bank details for submitting Tender fees through bank transfer / NEFT:	Beneficiary Name - Industrial Energy Limited Bank Name - HDFC Bank Ltd Branch code - 000706 IFSC code - HDFC0000706 A/c No - 07060310000021 Branch - Jajpur Road Branch MICR code - 755240102
Deadline for tender fee payment and submission of EOI:	21st July 2026

It may please be noted that all future correspondence will be strictly done only with Interested Bidders who have done the above steps in time with Authorized Person only through MPL E-Tender System.

Detailed Bid Document (also referred as RFQ) shall be issued through Tata Power e-tender portal (Ariba System) only to the parties that submitted a valid EOI as per terms mentioned in this document.

Bidder to note that commercials for subject tender may be conducted through e-auction. Detailed bidding and auction process shall be detailed in the RFQ / tender document.

4. BIDDER PRE-QUALIFICATION CRITERIA:

A. Technical Requirements

- 1 Bidder Tenderer should have minimum Average Annual Turn-over of Rs. 10 Crores (Indian Rupees Ten Crores) consecutively during the last three financial years (i.e., FY 2023-24, FY 2024-25, FY 2025-26 (ITR is required in this regard).
2. The Bidder Tenderer should furnish List of Clients with completion certificate to whom Cooling Water treatment composite service Contract provided during the last three financial years i.e., (i.e., FY 2023-24, FY 2024-25, FY 2025-26 ((Attach Certificates from concerned)

3. The Bidder/Tenderer should provide minimum three references for having successfully rendered Cooling Water treatment composite services at industrial premises having annual contract value of Rs. 50 lakhs or above in 2-3 Tata Group Companies and other big industrial power plants. Prior experience of NTPC, Tata Power and Tata Steel Limited, Kalinganagar will be an added advantage. (Attach Certificate of Experience and Satisfactory Completion of work awarded from concerned Establishments Companies)

4. Bidder/Tenderer should necessarily have their full-fledged Laboratory setup and a digital platform for monthly MIS reports to capture daily log, daily checklists, Conc. H₂SO₄ Handling, Sodium Hypo chlorite (NaOCl) Handling, Dosing and Commodity Chemical Handling and Dosing, Report Daily issues & concern to user, share monthly reports etc.

5. Bidder / Tenderer must have valid Supply license for treatment chemical with NABL Certificate. Also, vendor Shall have all legal and statutory documents for transporting Cooling Water treatment chemicals.

B. Financial Requirements

- The vendor should have a minimum annual turnover of ₹3 Crores for the last 3 financial years, supported by audited financial statements.
- Positive net worth and profitability in the last 3 financial years.
- Must Not have been disqualified/blacklisted in any public/Govt sector during the last 05 (Five) years for the similar nature of job. (Contractor's Self Certification).

5. BID SECURITY/EMD (To be submitted along with RFQ and not with EOI):

Interested parties to note that Bidder is required to furnish a Bid Security along with their Bid (only during Bid Submission stage), as a Bank Guarantee (in the format prescribed in Bid Document) or as NEFT/RTGS/DD for an amount of INR 1,26,000/- (INR: One Lakh Twenty-Six Thousand Only). Bids not accompanied by an acceptable Bid Security shall be rejected by the Owner as being non-responsive and returned to the bidder without being opened.