



**OWNER:
THE TATA POWER COMPANY LIMITED**

TITLE OF WORK TO BE AWARDED:

- a) Services for ESP overhauling of Trombay Unit 5 during major shutdown (3 Nos)**
- b) Services for ESP overhauling of Trombay Unit 5 one at a time (3 Nos) prior to shutdown**

ENQUIRY REFERENCE NO.: CC25JG100 and CC25JG101

NOTICE INVITING EXPRESSION OF INTEREST (EOI) FOR-

- a) Services for ESP overhauling of Trombay Unit 5 during major shutdown (3 Nos)
- b) Services for ESP overhauling of Trombay Unit 5 one at a time (3 Nos) prior to shutdown

Enquiry reference no.: CC25JG100 and CC25JG101
Title of Work: a) Services for ESP overhauling of Trombay Unit 5 during major shutdown (3 Nos) b) Services for ESP overhauling of Trombay Unit 5 one at a time (3 Nos) prior to shutdown
Type of Bidding: E-tendering (through Ariba online portal) / Two Part (Technical and Price bids under separate envelopes)
Contact Details: Contact Details: All communication including EOI submission shall be addressed to following officer/s: Ms. Juhi Gaur Email: juhigaur@tatapower.com Copy of all communications shall be marked to (Cc): Mr. Kailas Surve Email: ksurve@tatapower.com

The Tata Power Company Limited (“Project Manager”) on behalf of M/s Tata Power Company Limited (“Owner”) invites Expression of Interest (EOI) from interested parties for the Two-Part e-Tendering Process of following Relevant Work Package:

Plant Details	Tender Fee	Bid Security	Estimated package value
The Tata Power Company Limited, Trombay Thermal Power plant Chembur	INR 2000/- (INR One Thousand Only) To be submitted along with EOI.	INR 60,000/- (INR Three Lakhs ten thousand only Only). Bid Security to be submitted as a Bank Guarantee at the BID stage (and not with EOI)	Approx. 60 lakhs

Table 1

1. INTRODUCTION:

The Tata Power Company Limited (TPC) is among the largest private sector Power Utility companies in India with presence in Generation, Transmission and Distribution of Power through conventional and renewable sources.

The tendering/ procurement activities for this Project are being managed from Tata Power’s following Office:

The Tata Power Company Limited,
Trombay Thermal Power Station,
Corporate Contracts,
5th Floor, Station B, Chembur-Mahul,
Mumbai 400074, Maharashtra, India.

2. BRIEF SCOPE OF WORK:

This Notice is for inviting Expression of Interest for ESP water washing, clinker removal & internal inspection, Replacement of rapping motor with gearbox, ESP Field Alignment work, Replacement of CE rapping shaft with hammer etc for overhauling of ESP at Trombay

Detailed Scope of Work for this Contract shall be provided in the Tender / RFQ document to all potential buyers submitting the valid EOI with due tender fees.

3. TENDER FEE & TIMELINES:

a) Interested parties meeting the "Bidder Pre-Qualification Requirements" specified under point no. 4 in this document can request tender document and participate in the bidding process by submitting the Expression of Interest (EOI) Letter along with the Tender Fee Payment Details to the contact details mentioned below not later than deadline specified below. Request for extension of EOI submission date will be not be entertained.

b) Interested bidders should submit the Expression of Interest (EOI) letter and tender fee payment details to below mentioned email addresses:

- Mails shall be addressed to (To): juhigaur@tatapower.com
- Must Mark a copy to (Cc): ksurve@tatapower.com

EOI / requests without complete information and communication as above within deadline shall be liable to be rejected and will not be considered further.

c) Tender Fee, as indicated in the Table1 above may be paid through **NEFT** as per details for payment of Tender Fee given in Table2 below:

Table 2

Details for payment of Tender Fee:	
Bank details for submitting Tender fees through bank transfer / NEFT:	Beneficiary Name: The Tata Power Company Limited Bank Name: HDFC Bank A/c no: 00600110000763 IFS Code: HDFC0000060 A/c type: CC Branch Name & Address: HDFC Bank, Maneckji Wadia Building, Nanik Motwani Marg, Fort, Mumbai 400023

Deadline for tender fee payment and submission of EOI:	20th September 2024
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d) Expression of Interest letter to be submitted along with tender fee payment details should include the following details:

- A covering letter duly stamped and signed by an authorized signatory clearly indicating the Tender Reference number and your EOI to participate in the tendering process.
- Tender fee payment details / reference no (ensure that tender fee is received by us within specified deadline)
- Bidder to indicate authorized person name, contact number and e-mail id (mandatory) of the person to whom RFQ / tender and all other communications to be addressed for this tender.

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

4. BIDDER PRE-QUALIFICATION REQUIREMENTS:

Interested parties to note that Bidder shall be required to fulfill the following bidder pre-qualification requirement / criteria in order to qualify for the subject work. Bidder will be required to submit relevant supporting documents to demonstrate their qualification during the bid submission stage against Tender document / RFQ and bidders not found meeting the pre-qualification requirements given below will be disqualified from the tender.

4.1 TECHNICAL REQUIREMENT:

BIDDER PRE-QUALIFICATION REQUIREMENTS:

Interested parties to note that Bidder shall be required to fulfill the following bidder pre-qualification requirement / criteria in order to qualify for the subject work. Bidder will be required to submit relevant supporting documents to demonstrate their qualification during the bid submission stage against Tender document / RFQ and bidders not found meeting the pre-qualification requirements given below will be disqualified from the tender.

TECHNICAL CRITERIA:

1. Bidder should have at least 10 years of an experience of servicing of 250MW/500MW Unit ESP.
2. Bidder should submit at least three numbers of Purchase Orders in past Five years with cumulative order value of minimum 50 Lakhs.

SAFETY REQUIREMENT:

a) Bidder should preferably have ISO 9001 / ISO 14001 / ISO 45001 certification or must give an undertaking to obtain the same within 2 months of qualification for the work.

FINANCIAL REQUIREMENT:

a) The average annual turnover of the bidder shall not be less than Rs. 1.0 Crores (Rupees One crores) for the preceding three financial years. Audited Balance Sheet and Profit & Loss Statement for last three completed financial years reckoned from the date of application.

SUPPORTING DOCUMENTS (to be submitted with Technical Bid):

a) Valid ISO Certificates True Copy

b) PO Copy, Completion Certificate from the concerned client in support of successful execution of jobs /reference projects to be submitted.

c) Experience details of past should be submitted as per the following table format:

1	2	3	4	5	6
Sl. No.	Client details/ Power plant details	Order No. Date & Year	Contract Tenure	Order value	Details of scope of work

5. BID SECURITY / EMD:

Interested parties to note that Bidder will be required to furnish a Bid Security along with their Bid, in the format prescribed in Bid Document **in the form of EMD**, for an amount as defined in the covering page of this notice document. 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.

Interested parties to note that Bid Security is not required with the EOI and it is required to be submitted with the Bid only during Bid Submission stage, once RFQ is released to the interested parties that have submitted a valid EOI.

6. BIDDING PROCESS:

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.



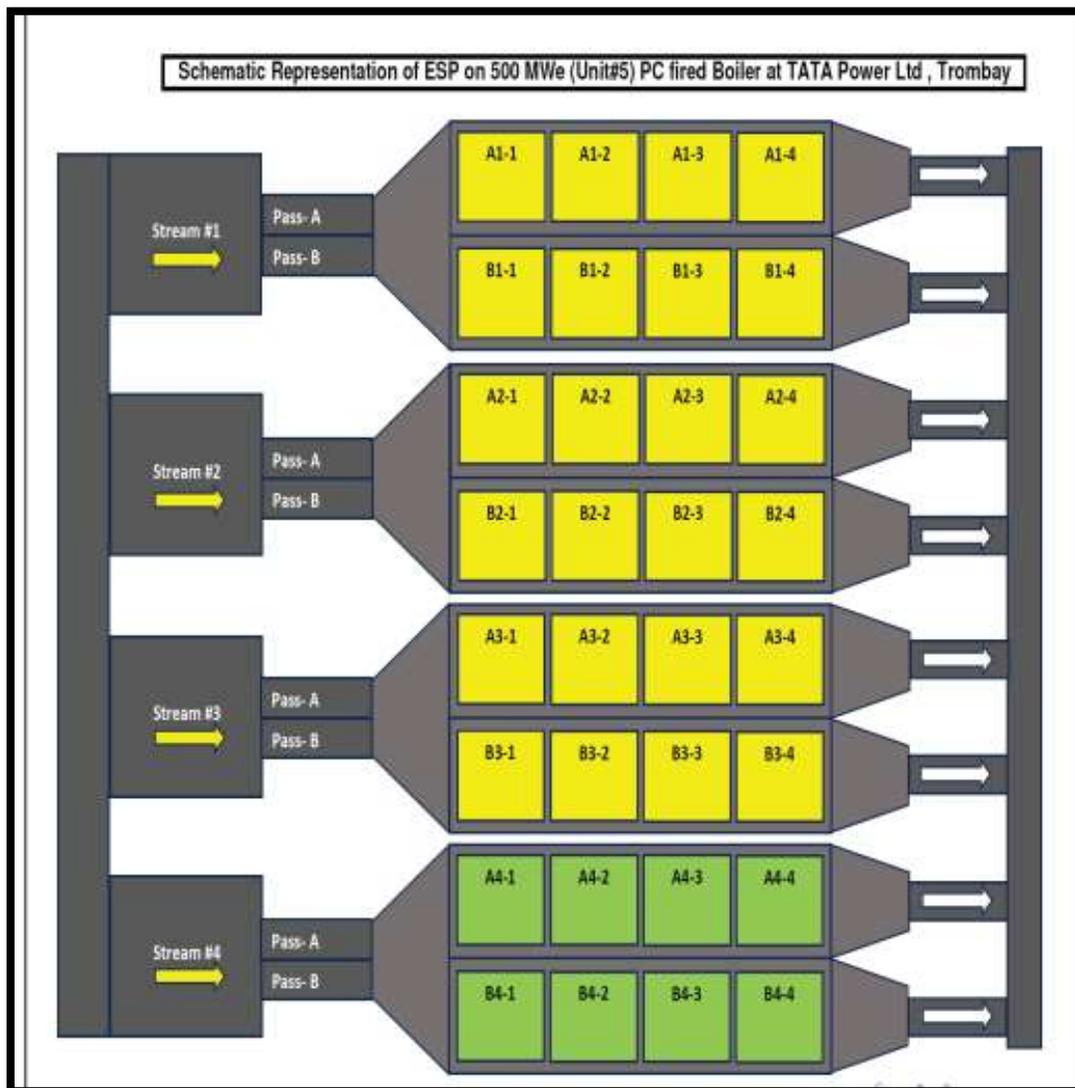
THE TATA POWER COMPANY LIMITED

TECHNICAL SCOPE OF WORK

FOR UNIT 5 ESP STREAM 1, 2, 3 Major Overhaul

Introduction

1. Tata Power Trombay Unit-5, is having ESP with 4No of streams. There are 3 Streams namely Stream 1, Stream 2 & Stream 3 retrofitted by M/s. KC Cottrell. Each stream is having two pass of 4 field each ($2 \times 4 = 8$ Field) & Energized by HFTR & 3 Phase transformer set. The Discharge Electrode is mounted at 2 level on mechanical framework with rapping mechanisms at two intermediate levels. The drives of the emitting electrode rapping mechanism for the emitting system comprises of the electric motors, the shaft & support insulators are rapped by tumbling hammer mechanisms. Field gapping design for Stream-1, 2 & 3 is 400mm.
All the fields in the electrostatic precipitator system are fitted with Spike type (Stream 1/2/3).



Prequalification for Vendor:

- a. Vendor should have ESP design, installation & commissioning experience more than 20 Years.
- b. Vendor should be ISO certified for 9001, 14001 & 45001.

Detailed Job Scope:

- A. U5 ESP stream 1, 2, 3 Overhaul within given time frame of 18 Days including final box up. Vendor has to share the detailed micro schedule along with manpower deputation 30 days prior to the shutdown.**

Sr. No.	Job Description
1	ESP water washing, clinker removal & internal inspection : <ul style="list-style-type: none">a) Clinker/Ash removal from Hopper, GD screen and ESP internals prior to ESP water wash.b) Individual collecting, emitting electrode and GD Screen should be cleaned from top to Bottom using high pressure jet machine.c) After water washing of all the ESP internals, detailed field inspection of all fields to be carried out by vendor and share the findings.d) Water washing activity along with internal inspection of all the streams should be done by jet spray machine & Tata power will do provision of service water.e) Hopper cleaning after finishing the job. Cleaning and removal of ash/clinker or any other foreign material.
2	Replacement of rapping motor with gearbox based on observation: <ul style="list-style-type: none">a) Cleaning, Inspection of collecting and emitting rapping motor gearbox set and replacement if found damaged.b) Removal of old damaged collecting and emitting rapping gearbox, Installation of new rapping gear box with motor & its trial after proper alignment.
3	ESP Field Alignment work : <ul style="list-style-type: none">i. Straightening of collecting plate over its entire length as required.ii. Any dislocated collecting plates from top hook or bottom shock bar shall have to be re- installed in its original position and the same shall have to be locked by means of bolting & tack welding.iii. Tack welding condition checking of all the Huck Bolts (collecting electrode), shock pad & collecting and emitting electrode hammer bolts.iv. Adjustment of emitting frame if required to maintain the gap between the emitting and collecting electrode.v. Each & Every emitting frame alignment shall be checked by vendor.

4	<p>Replacement of emitting electrode based on observation :</p> <ol style="list-style-type: none"> a) Inspection of emitting electrode and replacement if found damage. b) Removal of damaged emitting electrode and installation of new emitting electrode as per the site Engineer instruction.
5	<p>Replacement of CE rapping shaft with hammer if required.</p> <ol style="list-style-type: none"> a) Removal of rapping motor gearbox, removal of plain bearing, set ring, rapping hammers and shock pad. b) Installation of new rapping shaft, sleeve fixing, waterlevel checking, plain bearing & set ring fixing and tack welding. c) Alignment of shaft, rapping hammer fixing and tack welding, shock pad replacement (if found damaged) & its alignment with hammer. d) Rapping motor gear box reinstallation, alignment & trial run in presence of TPCL Engg.
6	<p>Replacement of DE rapping shaft with hammer if required.</p> <ol style="list-style-type: none"> a) Removal of rapping motor gearbox, removal of rapping shaft, plain bearing, set ring, rapping hammers and shock pad. b) Installation of new rapping shaft, sleeve fixing, waterlevel checking, plain bearing & set ring fixing and tack welding. c) Alignment of shaft, rapping hammer fixing and tack welding, shock pad replacement (if found damaged) & its alignment with hammer. d) Rapping motor gear box reinstallation, alignment & trial run in presence of TPCL Engg.
7	<p>Replacement /Repair of CE & DE anvil/shock pad if required.</p> <ol style="list-style-type: none"> a) Collecting and emitting electrode anvil/shock pad inspection and replacement if found damaged. b) Removal of damaged collecting and emitting anvil/shock pad by opening or cutting the bolts. c) New collecting and emitting anvil/shock pad installation its alignment with hammer and tack welding of bolts after tightening. d) Tack welding of all the CE and DE shock pad fasteners after checking its tightness.
8	<p>Replacement/Repair of CE & DE hammer based on observation.</p> <ol style="list-style-type: none"> a) Collecting, Emitting and GD screen rapping system maintenance and hammer replacement if found damaged. b) Checking of all the components of collecting, emitting and GD screen Rapping hammer. c) The worn out and damaged/missing component are to be removed by gascutting. d) Tack welding on fasteners to be carried out after refitting/renewal of the component & its alignment. e) Tack welding of all the CE inner and DE inner arm & outer arm fasteners after checking its tightness.

9	<p>Replacement OR Repair of CE & DE Plain bearing based on observation.</p> <ol style="list-style-type: none"> a) Inspection of Plain bearing of collecting & emitting rapping system and its repair/replacement if found damaged/missing. b) Dismantling of worn out plain bearing of collecting & emitting rapping system if found damaged. c) Replacement of worn out bearing, its levelling and tack welding of the fasteners after tightening.
10	<p>Inspection, Cleaning of shaft Insulator & Replacement of shaft insulator if found damaged OR Cracked.</p> <ol style="list-style-type: none"> a) Cleaning & inspection of all shaft insulator and its replacement if found damaged. a) Gasket of shaft insulator box to be replaced to be replaced to be replace mandatory.
11	<p>Inspection, Cleaning of support Insulator & Replacement of support insulator if found damaged OR Cracked.</p> <ol style="list-style-type: none"> b) Cleaning & inspection of all Support insulator and its replacement if found damaged. c) Gasket of box guard (inspection window) to be replaced to be replace mandatory.
12	<p>Checking/replacement of support insulators heaters.</p> <ol style="list-style-type: none"> a) Support insulator heater field junction box cleaning, inspection, tightness of terminals etc. b) Support Insulator heater IR checking, resistance measurement, current measurement etc. & all the readings to be submitted to TPCL. c) Replacement of Support insulator if found damaged OR faulty with new one. d) Replacement of Support insulator power cable from field junction box to support insulator JB if found faulty OR damaged.(Cable length appx 10 MTR)
13	<p>Checking/replacement of hopper heaters.</p> <ol style="list-style-type: none"> a) Hopper heater field junction box cleaning, inspection, tightness of terminals etc. b) Hopper heater IR checking, resistance measurement, current measurement etc. & all the readings to be submitted to TPCL. c) Replacement of Hopper heater if found damaged OR faulty with new one. d) Replacement of Hopper heater power cable from field junction box to support insulator JB if found faulty OR damaged. (Cable length appx 10 MTR)

14	<p>Checking/replacement/fault finding of hopper vibration system.</p> <ul style="list-style-type: none"> a) Hopper Vibration Local control panel cleaning, inspection, tightness of terminals etc. b) Hopper Vibrator motor IR checking, resistance measurement, current measurement etc. & all the readings to be submitted to TPCL. c) Replacement of Hopper vibrator motor if found damaged OR faulty with new one. d) Replacement of Hopper vibrator power cable from field junction box to Local control panel if found faulty OR damaged. (Cable length appx 10 MTR)
15	<p>Maintenance of 3 phase rectifiers sets :</p> <ul style="list-style-type: none"> a) External cleaning of rectifier sets. b) Rectifier set HV bushings cleaning & tightness work. c) Rectifier outgoing duct inside cleaning & wall through bushings tightness, cleaning & oil leakage to be arrest if any oil leakage found inside duct. d) Rectifier set oil top up if found below level.
16	<p>Maintenance of HFTR panels :</p> <ul style="list-style-type: none"> a) External & internal cleaning of HFTR sets. b) HFTR set HV bushings cleaning inspection & tightness work. c) HFTR outgoing duct inside cleaning & wall through bushings cleaning, Inspection tightness, & oil leakage to be arrest if any oil leakage found inside duct. d) HFTR set oil top up if found below level. e) HFTR radiator fan assembly & its air filters cleaning work. f) HFTR incoming power terminals cleaning, inspection tightness & replacement if found any terminal damage.
17	<p>Inspection of ESP hoppers :</p> <ul style="list-style-type: none"> g) Restoration of baffle plates in case of any damage & fallen inside hoppers. h) Hopper inspection to be carried out for physical inspection of ash presence. i) Vendor shall do each & every hopper Baffle plates inspection. If baffle plates found fallen inside hopper then vendor shall restore in its original position. j) If Baffle plate absent in hopper then vendor shall made arrange fabrication of new baffle plate as per design data & its installation in hoppers. k) Vendor shall do each & every hopper baffle plates welding joints inspection physically & if welding joints found corroded OR weak, vendor shall do through welding of Baffle plates joints where it welded to hopper walls.
18	<p>Miscellaneous ESP Repair Job: Miscellaneous repair Job includes minor modification in ESP internals which requires welding, cutting, grinding, fabrication of material as instructed by site Engineer.</p> <ul style="list-style-type: none"> a) Inspection & repair of GD screen plate both front & rear. The damaged

plate to be repaired by heating/welding/drilling and tack welding with the frame.

- b) Guide angle repair/replacement of rapping end side and non-rapping end side by removal/cutting of damaged angle. If required, straightening the same by heating, hammering and re-erection of repaired guide angle in position shall have to carry out by welding as instructed by site Engineer.
- c) Any Other jobs that are required to be executed for making field available.

Proposed Technical Staff & manpower:

SR No	CATEGORY	Numbers Proposed to be deploy at site for this job.	Experience
1	Site Engineer	1	Site Engg should have Diploma/ Degree in engineering with min 10 years' experience in ESP field & shall be competent for ESP internal inspections, fault finding, rectification, retrofitting at site to improve ESP performance.
2	Safety Supervisor	1	Safety Supervisor should have min 5 years' experience in ESP jobs & should have completed 1 year Advance Diploma in industrial safety by any State board. & Should have knowledge of confined space work safety, working at height, electrical safety, etc.
2	Site Supervisor	1	Supervisor should have Diploma/ ITI in engineering with min 10 years' experience in ESP field & shall be competent for ESP internal inspections, fault finding, rectification, retrofitting at site to improve ESP performance.
3	Electrician	As per quantum of job	Electrician shall be authorized electrician license holder & shall have min 5 years of work experience in ESP field.
4	Welder / Gas Cutter	As per quantum of job	Welder shall be authorized welding license holder & Welder shall have min 5 years of work experience in ESP field.
5	Technician / Fitter	As per quantum of job	Technician shall have min 5 years of work experience in ESP field.
6	Asst .Technician / Helper	As per quantum of job	Asst.Technician shall have min 5 years of work experience in ESP field.

a) Other Terms & Conditions:

- a. Vendor shall mobilize all manpower at site two days prior to start of the outage.
- b. Gate Pass Formality should be completed at-least 1 month prior to the start of the outage.
- c. As applicable L1/L2/L3 safety training must be completed for all workers, before starting the ESP outage.
- d. Dedicated workers provided by vendor should not combined other working area.
- e. Vendor shall deploy adequate number of experienced and qualified manpower's along withsupervisors exclusively for the work as per the instructions of M/s TPC engineer.
- f. Vendor shall maintain the day to day progress and quality records of the work. Read the Business Associates safety code of conduct & Standard guidelines and follow the guidelines. Any safety violation willlead to penalty as well as cancellation of contract.
- g. Vendor is not allowed to reduce the man power till the completion of ESP Overhauling activities and clearance from the Tata Power Engineer.
- h. Testing of contractor's electrical equipment's like ELCB testing of extension boards, welding machine and drill machine etc. are to be ensure & Certified by M/s Tata Power.
- i. Shifting of spares, special tools materials and equipment from stores/ workshop to and from site. Any failure in return or damage to company tools shall be back charged from the Vendor.
- j. Vendor to carry out housekeeping at the end of every shift prior to start of next shift to remove scrap, unwanted material, debris, structural steel, ash, insulation, etc. Failure to doso will attract penalty as per standard terms mentioned in Contractor Safety code of conduct. (Appendix 5: CSM-F4, page 11).
- k. Vendor is recommended to have site visit & get briefed about the job scope prior to quoting.

b) Tata Power Scope:

- a. Spare material will be provided by TATA Power : ESP internal spares like Support insulator, shaft insulator, Hammer, Shock pad, Plainbearing, set ring, emitting electrode hopper heater ,support insulator heater ,cotton rope CE & DE motor gearbox set etc.
- b. 440/230V supply will be provided at nearest designated points.
- c. Water & Hose required for water washing as per site requirements.
- d. Necessary ESP GA drawings, Layouts etc.

c) Vendor Scope:

- a) Metal rope should be used for providing life line arrangement inside ESP field as per working requirement.
- b) All the required tools and tackles should reach the site seven days prior to start of the outage and stored near the working area. Tata Power Engineer will carry out Safety inspection of electrical equipment like welding machine, cutting set, grinding machine and supply extension board and its ELCB & vendor shall ensure the same.
- c) Vendor shall provide 24 volt lighting transformers along with hand lamps/bulbs and cables of sufficient length & extension boards, torches etc. as per site requirement for proper illumination at site.
- d) Form-11 of all lifting tools and tackles to be maintained at site. All lifting tools and tackles should be of IS3832 standard. All chain blocks to be used at site should have locking latch.
- e) Vendor shall provide jet machine along with water tank & hose for ESP water washing.



d) Deliverables:

- a. Vendor has to complete overhaul of ESP with activities mentioned in the job scope within the schedule outage of 18 days. Vendor to ensure field withstands air load test at 75KV without spark for all fields of stream 1/2/3.
- b. After Taking ESP in service vendor shall demonstrate ESP performance efficiency more than 99.75% with n-1 field in service for each stream after 1 month.
- c. Working area housekeeping to be maintained round the clock (before starting, while working and after finishing the job on daily basis).



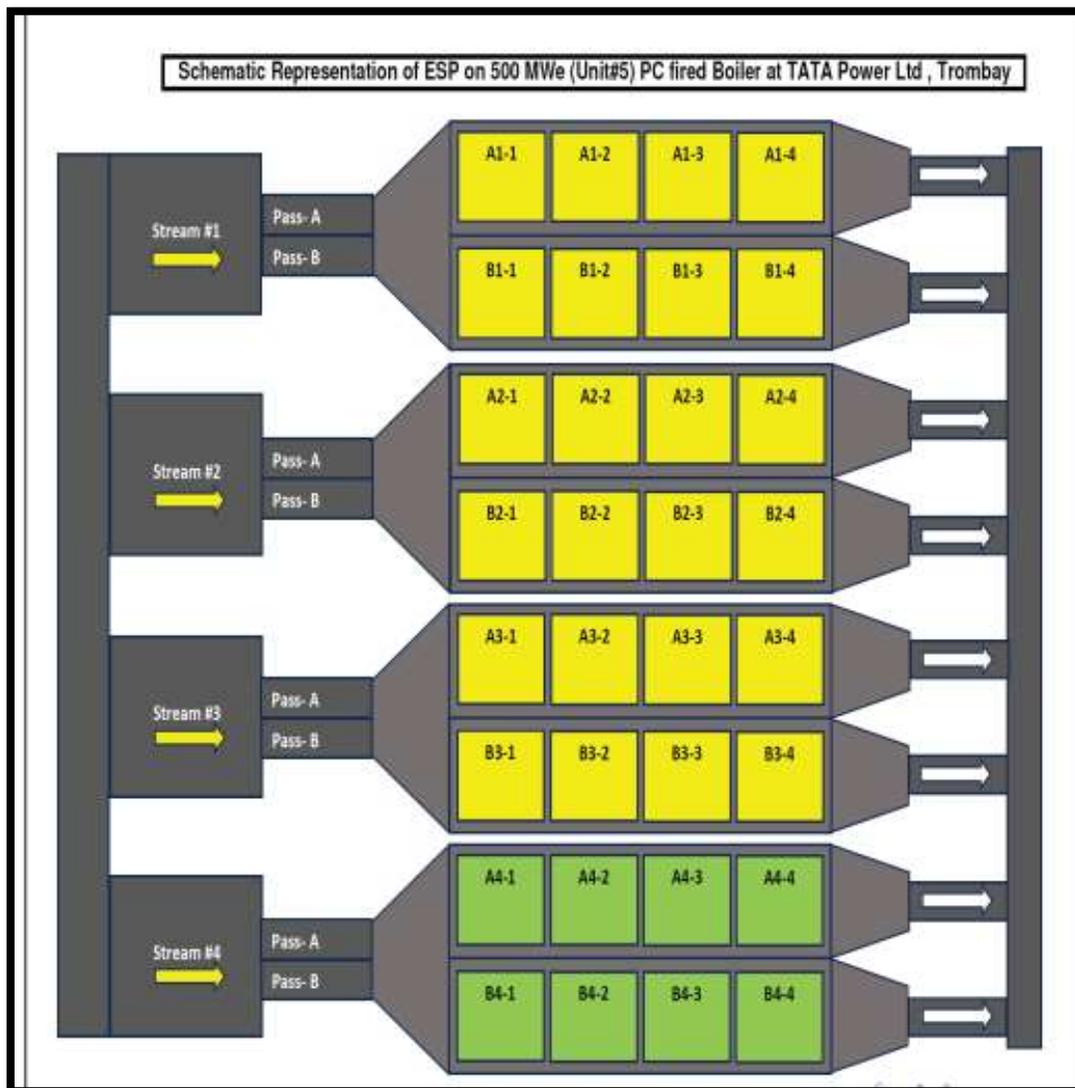
THE TATA POWER COMPANY LIMITED

TECHNICAL SCOPE OF WORK

**FOR UNIT 5 ESP STREAM 1, 2, 3 Major Overhaul in a phase manner
(One at a time)**

Introduction

1. Tata Power Trombay Unit-5, is having ESP with 4No of streams. There are 3 Streams namely Stream 1, Stream 2 & Stream 3 retrofitted by M/s. KC Cottrell. Each stream is having two pass of 4 field each ($2 \times 4 = 8$ Field) & Energized by HFTR & 3 Phase transformer set. The Discharge Electrode is mounted at 2 level on mechanical framework with rapping mechanisms at two intermediate levels. The drives of the emitting electrode rapping mechanism for the emitting system comprises of the electric motors, the shaft & support insulators are rapped by tumbling hammer mechanisms. Field gapping design for Stream-1, 2 & 3 is 400mm.
All the fields in the electrostatic precipitator system are fitted with Spike type (Stream 1/2/3).



Prequalification for Vendor:

- a. Vendor should have ESP design, installation & commissioning experience more than 20 Years.
- b. Vendor should be ISO certified for 9001, 14001 & 45001.

Detailed Job Scope:

- A. U5 ESP stream 1, 2, 3 Overhaul in a phase manner one stream at a time in given period of 20 days each (20X3). Vendor has to share the detailed micro schedule along with manpower deputation.**
- B. Vendor should estimate the time period for completion of work as per the job scope for each stream & quote accordingly.**
- C. M/s.Tata Power will inform vendor in one month advance prior to tentative shutdown period of each stream.**

Sr. No.	Job Description
1	ESP water washing, clinker removal & internal inspection : <ul style="list-style-type: none">a) Clinker/Ash removal from Hopper, GD screen and ESP internals prior to ESP water wash.b) Individual collecting, emitting electrode and GD Screen should be cleaned from top to Bottom using high pressure jet machine.c) After water washing of all the ESP internals, detailed field inspection of all fields to be carried out by vendor and share the findings.d) Water washing activity along with internal inspection of all the streams should be done by jet spray machine & Tata power will do provision of service water.e) Hopper cleaning after finishing the job. Cleaning and removal of ash/clinker or any other foreign material.
2	Replacement of rapping motor with gearbox based on observation: <ul style="list-style-type: none">a) Cleaning, Inspection of collecting and emitting rapping motor gearbox set and replacement if found damaged.b) Removal of old damaged collecting and emitting rapping gearbox, Installation of new rapping gear box with motor & its trial after proper alignment.
3	ESP Field Alignment work : <ul style="list-style-type: none">i. Straightening of collecting plate over its entire length as required.ii. Any dislocated collecting plates from top hook or bottom shock bar shall have to be re- installed in its original position and the same shall have to be locked by means of bolting & tack welding.iii. Tack welding condition checking of all the Huck Bolts (collecting electrode), shock pad & collecting and emitting electrode hammer bolts.iv. Adjustment of emitting frame if required to maintain the gap

	<p>between the emitting and collecting electrode.</p> <p>v. Each & Every emitting frame alignment shall be checked by vendor.</p>
4	<p>Replacement of emitting electrode based on observation :</p> <p>a) Inspection of emitting electrode and replacement if found damage.</p> <p>b) Removal of damaged emitting electrode and installation of new emitting electrode as per the site Engineer instruction.</p>
5	<p>Replacement of CE rapping shaft with hammer if required.</p> <p>a) Removal of rapping motor gearbox, removal of plain bearing, set ring, rapping hammers and shock pad.</p> <p>b) Installation of new rapping shaft, sleeve fixing, waterlevel checking, plain bearing & set ring fixing and tack welding.</p> <p>c) Alignment of shaft, rapping hammer fixing and tack welding, shock pad replacement (if found damaged) & its alignment with hammer.</p> <p>d) Rapping motor gear box reinstallation, alignment & trial run in presence of TPCL Engg.</p>
6	<p>Replacement of DE rapping shaft with hammer if required.</p> <p>a) Removal of rapping motor gearbox, removal of rapping shaft, plain bearing, set ring, rapping hammers and shock pad.</p> <p>b) Installation of new rapping shaft, sleeve fixing, waterlevel checking, plain bearing & set ring fixing and tack welding.</p> <p>c) Alignment of shaft, rapping hammer fixing and tack welding, shock pad replacement (if found damaged) & its alignment with hammer.</p> <p>d) Rapping motor gear box reinstallation, alignment & trial run in presence of TPCL Engg.</p>
7	<p>Replacement /Repair of CE & DE anvil/shock pad if required.</p> <p>a) Collecting and emitting electrode anvil/shock pad inspection and replacement if found damaged.</p> <p>b) Removal of damaged collecting and emitting anvil/shock pad by opening or cutting the bolts.</p> <p>c) New collecting and emitting anvil/shock pad installation its alignment with hammer and tack welding of bolts after tightening.</p> <p>d) Tack welding of all the CE and DE shock pad fasteners after checking its tightness.</p>
8	<p>Replacement/Repair of CE & DE hammer based on observation.</p> <p>a) Collecting, Emitting and GD screen rapping system maintenance and hammer replacement if found damaged.</p> <p>b) Checking of all the components of collecting, emitting and GD screen Rapping hammer.</p> <p>c) The worn out and damaged/missing component are to be removed by gascutting.</p> <p>d) Tack welding on fasteners to be carried out after</p>

	<p>refitting/renewal of the component & its alignment.</p> <p>e) Tack welding of all the CE inner and DE inner arm & outer arm fasteners after checking its tightness.</p>
9	<p>Replacement OR Repair of CE & DE Plain bearing based on observation.</p> <p>a) Inspection of Plain bearing of collecting & emitting rapping system and its repair/replacement if found damaged/missing.</p> <p>b) Dismantling of worn out plain bearing of collecting & emitting rapping system if found damaged.</p> <p>c) Replacement of worn out bearing, its levelling and tack welding of the fasteners after tightening.</p>
10	<p>Inspection, Cleaning of shaft Insulator & Replacement of shaft insulator if found damaged OR Cracked.</p> <p>a) Cleaning & inspection of all shaft insulator and its replacement if found damaged.</p> <p>a) Gasket of shaft insulator box to be replaced to be replaced to be replace mandatory.</p>
11	<p>Inspection, Cleaning of support Insulator & Replacement of support insulator if found damaged OR Cracked.</p> <p>b) Cleaning & inspection of all Support insulator and its replacement if found damaged.</p> <p>c) Gasket of box guard (inspection window) to be replaced to be replace mandatory.</p>
12	<p>Checking/replacement of support insulators heaters.</p> <p>a) Support insulator heater field junction box cleaning, inspection, tightness of terminals etc.</p> <p>b) Support Insulator heater IR checking, resistance measurement, current measurement etc. & all the readings to be submitted to TPCL.</p> <p>c) Replacement of Support insulator if found damaged OR faulty with new one.</p> <p>d) Replacement of Support insulator power cable from field junction box to support insulator JB if found faulty OR damaged.(Cable length appx 10 MTR)</p>
13	<p>Checking/replacement of hopper heaters.</p> <p>a) Hopper heater field junction box cleaning, inspection, tightness of terminals etc.</p> <p>b) Hopper heater IR checking, resistance measurement, current measurement etc. & all the readings to be submitted to TPCL.</p> <p>c) Replacement of Hopper heater if found damaged OR faulty with new one.</p> <p>d) Replacement of Hopper heater power cable from field junction box to support insulator JB if found faulty OR damaged. (Cable length appx 10 MTR)</p>

14	<p>Checking/replacement/fault finding of hopper vibration system.</p> <ul style="list-style-type: none"> a) Hopper Vibration Local control panel cleaning, inspection, tightness of terminals etc. b) Hopper Vibrator motor IR checking, resistance measurement, current measurement etc. & all the readings to be submitted to TPCL. c) Replacement of Hopper vibrator motor if found damaged OR faulty with new one. d) Replacement of Hopper vibrator power cable from field junction box to Local control panel if found faulty OR damaged. (Cable length appx 10 MTR)
15	<p>Maintenance of 3 phase rectifiers sets :</p> <ul style="list-style-type: none"> a) External cleaning of rectifier sets. b) Rectifier set HV bushings cleaning & tightness work. c) Rectifier outgoing duct inside cleaning & wall through bushings tightness, cleaning & oil leakage to be arrest if any oil leakage found inside duct. d) Recti former set oil top up if found below level.
16	<p>Maintenance of HFTR panels :</p> <ul style="list-style-type: none"> a) External & internal cleaning of HFTR sets. b) HFTR set HV bushings cleaning inspection & tightness work. c) HFTR outgoing duct inside cleaning & wall through bushings cleaning, Inspection tightness, & oil leakage to be arrest if any oil leakage found inside duct. d) HFTR set oil top up if found below level. e) HFTR radiator fan assembly & its air filters cleaning work. f) HFTR incoming power terminals cleaning, inspection tightness & replacement if found any terminal damage.
17	<p>Inspection of ESP hoppers :</p> <ul style="list-style-type: none"> g) Restoration of baffle plates in case of any damage & fallen inside hoppers. h) Hopper inspection to be carried out for physical inspection of ash presence. i) Vendor shall do each & every hopper Baffle plates inspection. If baffle plates found fallen inside hopper then vendor shall restore in its original position. j) If Baffle plate absent in hopper then vendor shall made arrange fabrication of new baffle plate as per design data & its installation in hoppers. k) Vendor shall do each & every hopper baffle plates welding joints inspection physically & if welding joints found corroded OR weak, vendor shall do through welding of Baffle plates joints where it welded to hopper walls.
18	<p>Miscellaneous ESP Repair Job: Miscellaneous repair Job includes minor modification in ESP internals which requires welding, cutting, grinding, fabrication of material as</p>

instructed by site Engineer.

- a) Inspection & repair of GD screen plate both front & rear. The damaged plate to be repaired by heating/welding/drilling and tack welding with the frame.
- b) Guide angle repair/replacement of rapping end side and non-rapping end side by removal/cutting of damaged angle. If required, straightening the same by heating, hammering and re-erection of repaired guide angle in position shall have to carry out by welding as instructed by site Engineer.
- c) Any Other jobs that are required to be executed for making field available.

Proposed Technical Staff & manpower:

SR No	CATEGORY	Numbers Proposed to be deploy at site for this job.	Experience
1	Site Engineer	1	Site Engg should have Diploma/ Degree in engineering with min 10 years' experience in ESP field & shall be competent for ESP internal inspections, fault finding, rectification, retrofitting at site to improve ESP performance.
2	Safety Supervisor	1	Safety Supervisor should have min 5 years' experience in ESP jobs & should have completed 1 year Advance Diploma in industrial safety by any State board. & Should have knowledge of confined space work safety, working at height, electrical safety, etc.
2	Site Supervisor	1	Supervisor should have Diploma/ ITI in engineering with min 10 years' experience in ESP field & shall be competent for ESP internal inspections, fault finding, rectification, retrofitting at site to improve ESP performance.
3	Electrician	As per quantum of job	Electrician shall be authorized electrician license holder & shall have min 5 years of work experience in ESP field.
4	Welder / Gas Cutter	As per quantum of job	Welder shall be authorized welding license holder & Welder shall have min 5 years of work experience in ESP field.
5	Technician / Fitter	As per quantum of job	Technician shall have min 5 years of work experience in ESP field.
6	Asst .Technician / Helper	As per quantum of job	Asst.Technician shall have min 5 years of work experience in ESP field.

a) Other Terms & Conditions:

- a. Vendor shall mobilize all manpower at site two days prior to start of the outage.
- b. Gate Pass Formality should be completed well in advance prior to the start of the outage.
- c. As applicable L1/L2 & L3 (for supervisor) safety training must be completed for all workers, before starting the ESP outage.
- d. Dedicated work group provided by vendor should not combined other working area.
- e. Vendor shall deploy adequate number of experienced and qualified manpower's along with supervisors exclusively for the work as per the instructions of M/s TPC engineer.
- f. Vendor shall maintain the day to day progress and quality records of the work. Read the Business Associates safety code of conduct & Standard guidelines and follow the guidelines. Any safety violation will lead to penalty as well as cancellation of contract.
- g. Vendor is not allowed to reduce the man power till the completion of ESP Overhauling activities and clearance from the Tata Power Engineer.
- h. Testing of contractor's electrical equipment's like ELCB testing of extension boards, welding machine and drill machine etc. are to be ensure & Certified by M/s Tata Power.
- i. Shifting of spares, special tools materials and equipment from stores/ workshop to and from site. Any failure in return or damage to company tools shall be back charged from the Vendor.
- j. Vendor to carry out housekeeping at the end of every shift prior to start of next shift to remove scrap, unwanted material, debris, structural steel, ash, insulation, etc. Failure to do so will attract penalty as per standard terms mentioned in Contractor Safety code of conduct. (Appendix 5: CSM-F4, page 11).
- k. Vendor is recommended to have site visit & get briefed about the job scope prior to quoting.

b) Tata Power Scope:

- a. Spare material will be provided by TATA Power : ESP internal spares like Support insulator, shaft insulator, Hammer, Shock pad, Plainbearing, set ring, emitting electrode hopper heater ,support insulator heater ,cotton rope CE & DE motor gearbox set etc.
- b. 440/230V supply will be provided at nearest designated points.
- c. Water & Hose required for water washing as per site requirements.
- d. Necessary ESP GA drawings, Layouts etc.

c) Vendor Scope:

- a) Metal rope should be used for providing life line arrangement inside ESP field as per working requirement.
- b) All the required tools and tackles should reach the site seven days prior to start of the outage and stored near the working area. Tata Power Engineer will carry out Safety inspection of electrical equipment like welding machine, cutting set, grinding machine and supply extension board and its ELCB & vendor shall ensure the same.
- c) Vendor shall provide 24 volt lighting transformers along with hand lamps/bulbs and cables of sufficient length & extension boards, torches etc. as per site requirement for proper illumination at site.
- d) Form-11 of all lifting tools and tackles to be maintained at site. All lifting tools and tackles should be of IS3832 standard. All chain blocks to be used at site should have locking latch.
- e) All PPE's required for safe working to be arranged by contractor. Specifications of PPE's to be taken from Tata Power Safety dept. in writing.
- f) Vendor must kept one spare filled cylinder of oxygen and DA at site.
- g) Vendor shall provide jet machine along with water tank & hose for ESP water washing.



d) Deliverables:

- a. Vendor has to complete overhaul of ESP with activities mentioned in the job scope. Vendor to ensure field withstands air load test at 75KV without spark for all fields of stream 1/2/3.
- b. After Taking ESP in service vendor shall demonstrate ESP performance efficiency more than 99.75% with n-1 field in service for each stream after 1 month.
- c. Working area housekeeping to be maintained round the clock (before starting, while working and after finishing the job on daily basis).