

Central Pollution Control Board  
Regional Directorate (Central)  
Parivesh Bhawan, Paryavran Parisar  
E-5, Arera colony, Bhopal (MP)-462 016  
Tel: 0755- 2775385 /86/ 84  
Email: [cpcb.bhopal@gov.in](mailto:cpcb.bhopal@gov.in)  
Website: [cpcb.nic.in](http://cpcb.nic.in)

**Notice Inviting Tender (NIT) Through Online: e-Portal**  
**e-Tender for Supply, Installation, Testing and Commissioning -SITC of Effluent Treatment Plant -500 LPD**

**e-Tender for Supply, Installation, Testing and Commissioning (SITC) of Effluent Treatment Plant (500 LPD)**

Sub: Invitation of online NIT for Supply, Installation, Testing and Commissioning (SITC) of Effluent Treatment Plant (500 LPD) at Central Pollution Control Board Regional Directorate (Central) at Parivesh Bhawan, E-5 Arera Colony, Paryavran Parisar, Bhopal (MP) -462 016.

<b>Particulars</b>	<b>Date &amp; Time</b>
Date of Uploading tender on CPP portal	15.06.2021 14.00 hrs.
Last Date of Submission of Tender	14.07.2021 15.00 hrs.
Date of Opening of Technical bid	15.07.2021 15.00 hrs.
EMD to be Submitted	Rs. 50,000/-
Office Address	Regional Directorate Central Pollution Control Board E-5 Arera colony Paryavran Parisar Bhopal-462016
Details of Form	1. Form-A for technical bid 2. Form-B for financial bid
Details of Annexures	1. Design criteria and equipments required 2. Process description and treatment scheme 3. Terms and conditions of the tender for construction of ETP at CPCB, RD, Bhopal. 4. Undertaking 5. Bid Security (EMD) Declaration 6. Flow diagram of ETP.

**Form A**

**Format of Technical Bid**

- 1. Name of Bidder :**
- 2. Address of Bidder:**
- 3. Telephone & Email :**
- 4. ID proof (Voter ID/Adhar Card)**
- 5. Address proof :**
- 6. PAN Number of Bidder :**
- 7. GSTIN registration Number:**
- 8. Bank details of bidder :**
- 9. Attach acceptance of technical specification with seal and signature (As per Annex. I) :**
- 10. Experience of Bidder (*Documents of evidence should be attached*)**

<b>Sl No.</b>	<b>Year</b>	<b>Name of Work</b>	<b>Client</b>	<b>Project cost</b>
1				
2				
3				

- 11. Any other information :**

**Place:**

**Full signature of the tenderer**

**Date:**

**Form- B Format of Financial Bid**

**(Effluent Treatment Plant of 500 LPD)**

<b>Sl No</b>	<b>Particulars</b>	<b>Amount in Rs.</b>
1	Cost of civil construction (in Rs) (Point no. 1 to 1.5 of Annex. I)	
2	Cost of mechanical spares / installation of accessories (in Rs) (Point no. 2 to 2.9 Annex.I)	
3	Cost of electrical items (in Rs) (Point no. 3 to 3.2 Annex.I)	
4	Cost of motorized gate for ETP (Point no. 4 Annex.I)	
5	Display board for parameters (Point no. 5 Annex.I)	
6	GST (in Rs)	
7	Packing, forwarding, freight, Installation & Insurance (in Rs)	
8	Other charges, if any (in Rs) (specify in details)	
9	Total Final Landing Cost including installation and taxes (in Rs) and (in words)	

**Note:**

If the bidder has quoted certain optional items other than above, that item shall not be taken into consideration for the evaluation of their price bid. Optional items should not be included in the final landing cost.

Date:

Place:

**Seal and Signature of tenderer**

**CENTRAL POLLUTION CONTROL BOARD, REGIONAL DIRECTORATE (CENTRAL), BHOPAL****DESIGN CRITERIA & TECHNICAL SPECIFICATION OF EQUIPMENT**

S.No.	Parameter of effluent treatment plant		
1.0	Work details	Quantity & specification required	Remark
1.1	<b>Civil work</b>		
	Sump well	1 No.	
	Size	1.1 M x 1.1 M x 1.0 M depth + Free Board (FB)	
	Capacity	1.2 M <sup>3</sup>	
	MOC	RCC with acid proof coating	
1.2	<b>Collection cum dosing tank</b>		
	Quantity	1 No.	
	Size	1.1 M x 1.1 M x 1.1 M + Free Board(FB)	
	Capacity	1 M <sup>3</sup>	
	MOC	Stainless steel (SS)	
1.3	<b>Diffused aeration tank</b>		
	Quantity	1 No.	
	Size	1.2 M x 1.2 M x 1.2 M FB	
	Capacity	1.0 M <sup>3</sup>	
	MOC	SS	
1.4	<b>Sludge drying bed</b>		
	Quantity	1 No.	
	Size	1.0 M x 1.0 M x 1.0 M	
	Capacity	1.0 M <sup>3</sup>	
	MOC	RCC	
1.5	<b>Plumbing</b>		
	Piping & Valves with aeration grid (All pipeline should be color coded as per instruction of RD/Coordinator)	UPVC (Schedule 40, Fittings Schedule 80)	
2.0	<b>Mechanical cum Installation work</b>		
	<b>Effluent lifting pumps</b>		
	Quantity	2 Nos.	
	Capacity	0.5 M <sup>3</sup> /hr	
	Head	15 M	
	MOC	CI	
	Make	Kirloskar or Sharp	
2.1	<b>Clear water tank</b>		
	Quantity	1 No.	
	Size	1.0 M x 1.0 M x 1.0 M + FB	
	Capacity	1000 Ltr. (1 M <sup>3</sup> )	

	MOC	HDPE or PVC with five layer	
2.2	<b>Lime dosing system for reaction tank</b>		
	Dosing Pumps (Lime and alum)	2 Set	
2.3	<b>Dosing tank for alum</b>		
	Capacity	50 Ltr.	
	MOC	HDPE	
2.4	<b>Dosing tank for lime</b>		
	Capacity	50 Ltr.	
	MOC	HDPE	
2.5	<b>Filter feed pumps</b>		
	Quantity	2 Noc.	
	Capacity	1.0 M <sup>3</sup> /hr	
	Head	28 - 30 M	
	MOC	CI	
	Make	Kirloskar or Sharp	
2.6	<b>Pressure sand filter column</b>		
	Quantity	1 No.	
	Type	Down flow	
	Dia	300 mm	
	HOS	1125 mm	
	Material of Construction	FRP or MS	
	Filter Media	Multi Grade Filter Media	
2.7	<b>Activated carbon filter column</b>		
	Quantity	1 No.	
	Type	Down flow	
	Dia	300 mm	
	HOS	1125 mm	
	Material of Construction	FRP or MS	
	Filter Media	Activated Carbon	
2.8	<b>Air root blowers</b>		
	Quantity	1 Nos.	
	Capacity	20 M <sup>3</sup> /hr	
	Head	5000 mmWC	
	Make	W 360/ Airvac / Equivalent as per BIS	
2.9	<b>Coarse bubble diffusers</b>		
	Quantity	3 Nos.	
	Size	Suitable	
	Type	Disc	
	MOC of Membrane	Silicon	
	Make	Rehau/Techpro /Equivalent as per BIS	
3.0	<b>Electricals work</b>		
	DOL, 4 Starter Control Panel Energy	As actual requirement	

	Meter		
	Electrical Wiring & Cable Tray, Float Switches Stand For Motors	As actual requirement	
3.1	<b>Energy meter</b>		
	Single phase with complete electrical panel	01 nos	
3.2	<b>Electromagnetic flow meter</b>		
	Quantity	2 Nos. (Inlet and outlet)	
	Line Size	15 NB	
	Make	Forbes Marshall or Equivalent	
4.0	<b>SITC of Motor with all mechanism on IN and Out Gate for ETP plant</b>		
	Make	IP 44 European or Equivalent as per BIS	
	Weight of Gate (Approx.)	800 Kg	
	Phase-230V, Power: 800W, Torgue = 50 NM		
	Photo cell Sensor	02 Nos.	
	Switch	02 Nos.	
	Remote	02 Nos.	
	Gate Wheels	4 SS and 8 Nylon	
	Other works i.e. Electrical Wiring , Welding works etc.	--	
	Rack 5M (approx.) and spacer bolts	10 Nos.	
5.0	<b>Digital Display system of pH , TDS, Conductivity</b>		
	Quantity	1 No each	
	Make	Forbes Marshall or Equivalent	

**Process description and waste water treatment scheme**

**Principle of Operation For E.T.P.**

The initial characteristics of wastewater normally contains the following parameter.

<b>PH</b>	-	4.5 to 8.5
<b>T.S.S.</b>	-	150-200mg/Lts.
<b>BOD</b>	-	80-100 mg /lts.
<b>COD</b>	-	400-600 mg/ Lts.
<b>O&amp;G</b>	-	< 20 mg/ Lts

The treatment of effluent generated will be done in three steps. Mainly know as Primary, Secondary and Tertiary treatment.

Treated water should confirm to the following limits:

<b>PH</b>	-	6.5-8.5
<b>T.S.S.</b>	-	<50 mg/Lts.
<b>BOD</b>	-	<10 mg /lts.
<b>COD</b>	-	<50 mg/ Lts.
<b>O&amp;G</b>	-	< 10 mg/ Lts
<b>Bio-assay test-</b>		90% survival of fish after 96 hours in 100% effluent

**TREATMENT SCHEME**

Following treatment scheme shall be employed for production of quality water for or recycling.

**BRIEF PROCESS DESCRIPTION OF STP**

- 1. Collection cum chemical dosing and Reaction cum Settling Tank:** After filling of Reaction cum Settling Tank Lime is added in the first place to bring the PH of waste water to around 8-8.5. There after Alum dosing. Is added to remove suspended solids from waste water by agitation provided in the tank. in last, Polyelectrolyte is added for fast coagulation of fine particles. This settling tank is provided to settling the treated effluent & to collect the sludge formed and to allow to supernatant liquor to pass-out.
- 2. Diffused aeration tank:** After dosing of chemicals waste water is allowed for a settling time of 2 hours. After settling, supernatant water is taken to aeration tank. The underflow i.e. sludge, which settles at the bottom, is drained out through conical bottom and is filtered through a sand filter. Filtrate is taken back to equalization tank and sludge retained at top, is taken to sludge drying bed.
- 3. Pressure sand filters and Activated Sand Filters :** From aeration tank , supernatant Water is pumped to pressure sand filters then Activated Carbon filters are provided to remove the final traces of oil & odour, if any, in the water .In event of chocking of bed, Back Wash arrangement is provided to loosen the bed which becomes compact over a period of time. The backwash from the MMF units will be fed back into the collection tank.

4. **Sludge beds:** The Sludge is collected from the Sludge filter is taken to the Solar sludge drying bed and Dried sludge is collected in the bags, sealed & disposed off as per HW norms. Supernatant from the sludge holding tanks is decanted and returned to collection tank for re-processing.
5. **Treated water holding tank:** The treated water holding tank will be used for storage of water which is later used for utility purpose in various section of the building.

### **Equipments for Treatment**

In order to achieve the desired regulatory parameters following equipment will be required under primary, secondary and tertiary scheme.



**Terms and conditions of the tender for construction of ETP at CPCB, RD, Bhopal.**

1	Tender in prescribed form at <b>Form-A and Form- B</b> are invited by the Regional Director of Central Pollution Control Board, Bhopal from agencies/ companies/ eligible reputed manufacturers having experience in SITC (supply, installation, testing and commissioning) of Effluent Treatment Plant (ETP) of 1 nos of such ETP having capacity of <b>500 LPD</b> as per specification <b>Annexure – I</b> at Regional Director of Central Pollution Control Board, Bhopal, MP
2	<u>Form of Tender:</u> The tender form will consist of two parts, (i) Form-A(Technical) and (ii) Form-B (Financial).
3	The Tender shall be finalized by a committee in the following procedure: (i) Form “A”- “Technical Bid” shall be opened first and evaluated as per the tender conditions in the office of the Regional Director of Central Pollution Control Board, Bhopal by a committee constituted. (ii) Form “B” - “Financial Bid” of the only those tenderers who qualify in the technical bid shall be opened by the Purchase committee of RD, CPCB, Bhopal.
4	Tender information also available at office website <a href="http://cpcb.nic.in">cpcb.nic.in</a> (For reference only).
5	The financial bid of only those tenderers will be opened whose technical bid are found to be acceptable. In the event of more than one bidder becomes L1, the Competent Authority in CPCB reserves the right to select one of the L1 bidders based upon various norms like quality of work experience, number of years in operation and other credentials like work completion certificate of any Central Government / State Government Undertaking /Organisation etc.
6	The site for the work is available/or the site for the work shall be made available for inspection on all working days except on Saturday, Sunday and Public Holidays.
7	The contractor, whose tender is accepted (unless exempted) will be required to furnish by way of performance guarantee for the fulfillment of his contract such sum as will amount at the rate of 5% of the awarded value of the contract. The Performance Security shall be valid till the expiry of the period of Maintenance of the work plus 60 days. The Performance Guarantee will be deposited either by the way of Bank Guarantee/FDR within the 15 days of award of work. The Performance Guarantee will be released after the ‘defects liability period’ subjects to verification of defects.
8	Canvassing in any form in connection with tender is strictly prohibited and the tenders submitted by the contractors who resort to be canvassing will be liable to rejection.
9	On acceptance of the tender, the name of the accredited representative of the contractor who would be responsible for taking instructions from CPCB shall be communicated to the CPCB.
10	The bidder is advised to visit the site of work, at his own cost, and examine it and its surroundings to himself collect all information that he considers necessary for proper assessment of the prospective assignment.

11	In case of any misshaping/accident during the execution of the work or any damage to the CPCB property, the contractor is liable to pay the damages to CPCB or compensation to the workers.
12	The employer shall not be responsible if any accident or death is caused during the execution of work, the contractor shall be responsible to pay the compensations.
13	The tenderer may offer his bid price both in Figures and words in the Financial Bid Format.
14	Phase-1: Technical Bid Evaluation: All the desired documents shall be inspected along with technical feasibility by a committee constituted for the purpose. Phase 2: Financial Bid Evaluation: Financial bid of all those bidders who qualify the technical bid shall only be opened by the Purchase Committee.
15	The following documents shall comprise the bid and shall be submitted by each bidder along with bid as mandatory requirement. The bidder, who fails to submit any of these documents shall be treated as “Non-responsive” and shall not be considered for further evaluation. <ul style="list-style-type: none"> <li>a) Proof of identity of the tenderer (Copy of Voter I. Card/Aadhar/ Driving license)</li> <li>b) Copy of PAN card.</li> <li>c) Copy of GST registration Certificate.</li> <li>d) The original bid document duly signed on each page as a token of acceptance of terms &amp; conditions of the bid document.</li> <li>e) Work orders and Completion Certificate of various works executed as specified in the eligible criteria</li> </ul>
16	All the bids received [technical & financial] within due date as specified in BDS will be opened on bid opening date/s as specified in the bidding document. These dates can be changed depending upon the situations and bidders will be informed in advance for the next date. Any change in the dates will be intimated at eprocure.gov.in portal as corrigendum.
17	The contract will remain in force for a period of <b>03</b> months from the date of signing of the agreement without any price escalation. Any variation in price for any other reason, whatsoever, shall not affect the agreed rates and shall not vitiate the contract and the successful bidder will be bound to continue to provide services at the agreed rates/prices.
18	The bidders are expected to examine all instruction, forms, terms and conditions in the bidding document. Failure to furnish all information required as specified in the bidding document or submission of a bid not responsive to the bidding document in every respect will be at bidder’s risk and may result in rejection of bid.
19	The rate quoted by the successful bidder shall be inclusive of all taxes and Govt. Duties as prevailing. The Officer in Charge of the project or Person authorized or committee so formed for this purpose of opening and finalizing the tender will deduct the taxes as per rule in force from the payment to be made to successful bidder.
20	After award of the contract, if there is any increase/decrease in any Govt. Duties or taxes, the same will be proportionately adjusted in the contract price from the date.

21	The Regional Director or any officer authorized or committee so formed for this purpose may, without prejudice to any other remedy for breach of contract by written notice of default sent to the successful bidder, the Regional Director or any officer, authorized or committee so formed for this purpose terminate the contract in whole or in part. If the contract is terminated, the successful bidder shall stop providing service immediately.
22	In the event of termination of contract by Officer in Charge of the project or Person authorized or committee so formed for this purpose on account of breach of contract condition or non-performance by the successful bidder, the entire Performance Security amount will be forfeited.
23	The Regional Director of Central Pollution Control Board, Bhopal or officer authorized or committee so formed for this purpose reserved the right to foreclosure the contract without assigning any reasons. In such case the successful bidder will not be entitled to any compensation for non-providing services or loss of profit or any incidental costs of any kind.
24	Information about the financial bid for Purchase and installation of ETP shall be provided as in Financial bid (Form- II). The successful bidder shall need to submit following deliverables at the time of submission of invoice for services provided as part of this contract. a) Certificate of warranty or guaranty. b) Certificate of free maintenance of the instruments.  Contact details or Address of the person or firm or organization in case if complaint if any to be filed in case if instruments needs any maintenance.
25	The time limit for rates will be <b>03</b> months from the date of signing the agreement and issuance of Work Order During this period the successful bidder cannot withdraw his rates.
26	It is confirmed that on submission of the tender, the bidders have been and thoroughly gone through the all specification, conditions, and other papers of the tender document and it is binding on the bidder to execute the work accordingly.
27	50% Payment will be released to the successful bidder against delivery of material at our site, 25% after commissioning, installation and demo and balance 25% will be released through PFMS within 30 working days after successful operation upon submission of valid invoice in two copies.
28	The Regional Director of Central Pollution Control Board, Bhopal or any officer authorized on his behalf or the committee so formed for this purpose of opening the Financial Bid will issue the specific work order on time to time [single or part of services] for Effluent Treatment Plant (ETP) based on the rates agreed as part of this contract.
29	The contract shall be governed as per Indian Law and shall be jurisdiction of Court in Bhopal.
30	Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender Regional Director or Dr R P Mishra, Scientist D of CPCB, RD, Bhopal at mail id <a href="mailto:cpcb.bhopal@gov.in">cpcb.bhopal@gov.in</a> , <a href="mailto:rpmishra.cpcb@nic.in">rpmishra.cpcb@nic.in</a> / phone – 0755-2775385/86, Mobile-09752531049

31	<p>Earnest Money Deposit (EMD) The earnest money is required to protect the Purchaser against the Bidder's withdrawing or altering its bid during the validity period. Hence an EMD amount as specified in Annexure-4, must accompany with the tender. EMD is required to be submitted in original separately-item wise on or before the last date of submission of bid as per the NIT. Scanned copy of EMD is required to be uploaded along with Technical bid.</p> <p>The successful bidder shall submit the EMD to Central Pollution Control Board, Bhopal for an amount equivalent to <b>5 % of the total bid price or Rs. 50000/- (Fifty thousand) whichever is more.</b> The earnest money shall be furnished in the form of Bank Guarantee/DD/FDR (format for EMD Bank Guarantee is given in this document).</p> <p>The earnest money shall be valid for a period of 90 days beyond the validity period of the tender. Unsuccessful Bidder's earnest money will be returned, without any interest, to them not later than 45 days after the expiry of the tender validity period. Successful Bidder's earnest money will be returned without any interest, after receipt of performance security from that Bidder.</p>
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1.	<b>Date of Commencement</b>	14 <sup>th</sup> day from the date of issue of letter of award.
2.	<b>Date of completion</b>	03 months from the date of commencement.
3.	<b>Insurance</b>	As directed.
4.	<b>Defects liability period</b>	One year
5.	<b>Period of final measurements</b>	Within 01 months from the date of completion.
6.	<b>Value of work for Interim Certificate</b>	100% after satisfactory completion of work
7.	<b>Security deposit</b>	5% of the contract amount as performance guarantee

Regional Director  
Central Pollution Control Board, Bhopal

**UNDERTAKING**

I \_\_\_\_\_ S/o \_\_\_\_\_  
at \_\_\_\_\_ Address \_\_\_\_\_ Dist \_\_\_\_\_

Pin: \_\_\_\_\_ do hereby undertake that I have read all the conditions and agrees to  
to it and submitted the tender for Effluent Treatment Plant (ETP)-500 LPD at Regional  
Directorate of Central Pollution Control Board, Bhopal

Signature of the tenderer

Date:

**BANK GUARANTEE FORM FOR EMD**

Whereas ..... (hereinafter called the “Bidder”) has submitted its quotation dated..... for the supply of ..... (hereinafter called the “tender”) against the Purchaser’s tender enquiry No. .... Know all persons by these presents that we ..... of ..... (hereinafter called the “Bank”) having our registered office at..... are bound unto ..... (hereinafter called the “Purchaser) in the sum of ..... for which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents.

Sealed with the Common Seal of the said Bank this..... day of ..... 20.....

The conditions of this obligation are —

- (1) If the Bidder withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
- (2) If the Bidder having been notified of the acceptance of his tender by the Purchaser during the period of its validity:-
  - a) fails or refuses to furnish the performance security for the due performance of the contract or
  - b) fails or refuses to accept or execute the contract.

We hereby irrevocably and absolutely undertake to pay immediately the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition(s).

This guarantee will remain in force for a period of forty five days after the period of tender validity and any demand in respect thereof should reach the Bank not later than the above date.

This guarantee will not be discharged due to change in the constitution of the bank or the Bidder.

.....  
(Signature of the authorised officer of the Bank)

.....Name and designation of the officer

.....Seal, name & address of the Bank and address of the Branch

ETP Flow Diagram for RD-Bhopal Lab Wastewater

