TENDER NO. IITH/SE/NIT/CPPP/2017-18/01

भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

DESIGN, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING (DSITC) OF ELECTRO-MECHANICAL, INSTRUMENTATION COMPONENTS FOR650 KLD CAPACITY STP AT IIT HYDERABAD INCLUDING 3 YEARS OF POST- COMMISSIONING OPERATION AND MAINTENANCE OF THE PLANT

:: PRICE BID ::

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Design, Supply, Installation, Testing, Commissioning and Operating 650 kLD STP at IIT Hyderabad

Price Bid and Payment Terms

The Contract for DSITC and Operation and Maintenance is on Lump Sum (LS) basis. The detailed schedule and payment terms are given under:

Payment Terms

(i) All the payments against the Schedules specified under Table 1 shall be made through Running Account Bills in specified format.

(ii) From all Running Account Bill payments of Part-A cited above, 2.5% of gross amount of payment shall be with-held as security deposit for the satisfactory performance of the plant. The security deposit so with-held shall be released at the end of two years from date of completion of Part-A as per the completion certificate issued by Engineer-in-Charge subject to adjustments of all amounts towards unattended claims, if any.

(iii) During the Part-B period of operation and maintenance of plant, monthly Running Account bills shall be raised by the contractor by 7th of every month in prescribed proforma(CPWA 27A). IITH shall endeavour to make payment of monthly Running Bills within ten working days from the date of receipt of bills in the office of Engineer-in-Charge, IITH.

(iv) The tendered amount for both Part-A and Part-B shall be inclusive of applicable Works Contract Tax under GST. For the purpose of assessing and issue of experience certificate, the value of work shall be reckoned as contract amount minus applicable GST on works.

(v) Other Taxes: Income tax/surcharge/cess or any other tax as applicable on the amounts paid by IIT Hyderabad shall be recovered at source at applicable rates as notified by Government of India and a certificate to this extent shall be issued to the contractor.

Table 1: Schedule of Payments

Component	Stage of work	Payment
Part-A (Original Agreement)	**Schedule.1**: Completion of Design and Detail Engineering and submission of the vetted drawings for approval of IITH.	5% of contract amount of Part-A
	Schedule.2: Delivery of electro-mechanical equipment including piping material to IITH site (items listed in the schedule of Contract Price and upon submission of priced invoice copies) [This schedule can be operated in a maximum of three segments].	Up to 80% of invoice value of the equipment brought to site subject to a maximum of 40% of contract amount of Part-A
	Schedule.3: Delivery of GE Membranes and Cassettes to site.	Up to 80% of invoice value of membranes etc., brought to site subject to a maximum of 20% of contract amount of Part-A
	Schedule.4: Completion of complete installation including all electro-mechanical equipment, membranes, and piping and all related allied works necessary for trial run.	10% of contract amount of Part-A
	Schedule.5: Completion of automation works including all PLC,HMI,SCADA, hardware, software, sensors, instruments etc.,	10% of contract amount of Part-A
	Schedule.6 (Provisional Final): Completion of trial run and commissioning of plant including all allied works related to mechanical/electrical /instrumentation works and declaration of completion of Part-A by IITH.	15% of contract amount of Part-A
Part-B (Supplementary Agreement)	**Schedule.7**: The relevant tendered rate shall be paid for Operation and Maintenance of STP plant, for the first 2 years and 11 months as monthly RA bills for O&M of plant.	Monthly contract amount rate for relevant period of Part-B
	Schedule.8 (Original Agreement and Supplementary Agreement): On completion of O&M period of three years after commissioning of the plant, Final Bill shall be settled under this schedule.	All dues to be settled on submission of Final bill by Contractor.

Contract Price Bid

Part A

PART-A: **Design, Supply, Installation, Testing and Commissioning of 650 kLD Sewage Treatment Plant

Table 2: Contract Price Bid - Part A

Sl No	Item	Quantity (W=Working; S= Standby)
1.	Design of electro-mechanical, instrumentation equipment, piping etc. detail engineering and vetting of working drawings by Technology Provider.	1
	Manual Coarse screen of 16 mm & fine screen of 6 mm of 162.5m3/hr for 3 streams of 650 kld and peak factor is 2.0 sluice gates	1W
3.	*RCC Chambers for screens	
4.	Mechanical fine screen of 6mm of 162.5m3/hr for 3 streams of 650 kld and peak factor is 2.0	1W
5.	*RCC Chambers for mechanical screen	
6.	Oil and grease removal system; (Belt Oil Skimmer) of 162.5m3/hr for 3 streams of 650 kld and peak factor is 2.0	1W
7.	*Oil and grease removal system chamber	
8.	*RCC Collection Sump of 162.5 with SWD of 2.5 mtrs.	
9.	Collection sump transfer Cutter pumps Cap: 65m3/hr@ 11mwc TDH; Submersible centrifugal for each 650 kld.	2 (1W + 1S)
10.	*RCC Equalization Tank Volume minimum required:285 m3 for each 650kld with 5.5m SWD	

Table 2: Contract Price Bid - Part A

Sl No	Item	Quantity (W=Working; S= Standby)
11.	Mixing Blowers with acoustic hood for eqt tank only for each 650kld Capacity: 195Nm3/hr @ 6 MWC. Twin Lobe blowers.	2(1W + 1S)
12.	Mixing Blowers with acoustic hood for SHT and Common collection sump tanks. Capacity: 110Nm3/hr @ 4.5 MWC. Twin Lobe blowers.	2(1W + 1S)
13.	Coarse Bubble Diffusers (14 Nos) in equalization tank retrievable type& retrievable or fixed type for CSS and SHT.	1 lot
14.	Bioreactor feed pump for 650kld. Capacity: 27 m3/hr @ 9mwc TDH.	2(1W + 1S)
15.	Mechanical Screen at inlet of Aeration tank Opening: 2 mm punched holes, Capacity: 27 m3/hr.	1 W
16.	Process Blowers with acoustic hood and VFD for 650 kld. Type: Twin Lobe type; Min Capacity: 428Nm3/hr @ 5.5 mwc	2(1W+1S)
17.	Membrane Blowers with acoustic hood for 650 kld; Type: Twin Lobe type; Min Capacity: 341Nm3/hr @ 4.6 mwc	2(1W+1S)
18.	*RCC Anoxic and aeration tank with 4.5 SWD; Anoxic volume min of 90m3 per 650kld; Aeration volume min of 175m3 per 650kld.	1W
19.	Fine Bubble Diffuser for 650 kld aeration tank (approx. 36 nos.)	1 lot
20.	*RCC Membrane tank for 48Module Leap cassette.	1W

Table 2: Contract Price Bid - Part A

Sl No	Item	Quantity (W=Working; S= Standby)
21.	ZW500D Leap 48 Module cassette, 34.37 sqm per module (Total 30 numbers of modules for each 650m3/day installed per 48M cassette for each 650kld)with all necessary SS accessories	As per specification
22.	RAS (Recycle) pump. Min Capacity: 108.5 m3/h @ 5 mwc for 650kld; Type: non-submersible type. Suction and discharge header shall be designed for 3x650 kld.	2(1W+1S)
23.	Permeate Pumps with VDF for 650kld; Min Capacity: 32-56 m3/hr @ 1 Bar.	2(1W+1S)
24.	FRP Back pulse tank 5000 litres for 3x650kld.	1W
25.	Sodium Hypochlorite dosing FRP tank system for membrane cleaning- 200 litres.	1W
26.	Sodium Hypochlorite dosing pumps for membrane cleaning 50-450lph @ 2bar.	2(1W + 1S)
27.	Citric acid dosing tank system for membrane cleaning- 200 litres FRP tank.	1W
28.	Citric acid dosing pumps for membrane cleaning 50- 180lph @ 2bar.	2(1W + 1S)
29.	*RCC Sludge Holding Tank for 1 day holding time. Sludge generation 48 m3 on daily basis for 3 streams of 650kld.	
30.	Sludge transfer pump @ 3.5 m3/hr Type: Screw /Horizontal centrifugal.	2(1W + 1S)
31.	Centrifuge suitable for 3.5 m3/hr flow rate for 3x650 KLD	1W
32.	Poly electrolyte dosing FRP tank and mixer for sludge dewatering- 0- 100 lph @ 2bar.	1W

Table 2: Contract Price Bid - Part A

Sl No	**Item**	**Quantity (W=Working; S= Standby)**
33.	Poly electrolyte dosing pump for sludge dewatering- 500 litres.	2(1W + 1S)
34.	Post Hypochlorite dosing FRP tank system for permeate side- 200 litres.	1W
35.	Post Hypochlorite dosing pumps for permeate side- 5-10 lph @ 1.5bar.	2(1W + 1S)
36.	Air Compressor 20 Nm3/hr @ 7 bar.	1W
37.	*RCC MBR permeate water tank/flushing water tank/chlorine contact tank/soft water tank.	
38.	Softner (15 cum/hour @3.5 Kg/cm2).	2W
39.	Softner feed pump.	2(1W+1S)
40.	MCC for equipment, compartmental type floor mounted.	1 no.
41.	DIN rail mounted PLC with panel mounted HMI for equipment, desktop PC,laser printer,licensed operating system and other software, SCADA, sensors, instruments, transducers etc.,. UPS for 30 minutes power supply.	1 Lot.
42.	Respective sluice,ball,butterfly,check valves including any other valves at various locations of the plant.	1 Lot
43.	Respective motors and VFD	1Lot

Table 2: Contract Price Bid - Part A

Sl No	Item	Quantity (W=Working; S= Standby)
44.	1no. Flowmeter at drum screen inlet, 1no. level switch in Equilization tank, 1.no. air flow switch in process blower line, 1no. flow meter in sludge line of RAS pump, 1no. pressure transmitter in permeate line, 1no. level transmitter in membrane tank, 1no flowmeter in permeate pump line, 1no. Turbidity meter at outlet of permeate pump, 1no. level switch in sludge holding tank. Respective level switches, pressure indicators.	1 Lot
45.	Respective Cables, cable tray, cable support system	1 Lot
46	Process piping in MBR system is UPVC along-with RAS pump piping for smaller NB and GRP/MS hot dip galvanized for bigger NB pipes. Air piping GI for non-submerged and UPVC for submerged. Chemical piping UPVC .	1 Lot
47	Electrical wiring, conduit and other appurtenances required to provide power connections as required from control panel and MCC panel to any electrical equipment, pump motors and instruments ; Installation of Fire Fighting systems.	1 Lot
48(a)	Installation and commissioning of complete automation system.	I Job
48(b)	Complete instrumentation in treated and soft water tanks.	I Job

Table 2: Contract Price Bid - Part A

Sl No	Item	Quantity (W=Working; S= Standby)
49	All Civil Works listed below: Equipment Foundation, Equipment foundations civil work, full floor coverage equipment contact pads, puddle pipes etc. All weather protection as required for process equipment skids and control equipment. BOP foundation in civil dosing system foundations in civil.	I Lot
50	Raw materials, chemicals, and utilities during equipment start-up trial run and commissioning.	I Lot
51	Disposal of Initial Start-up waste water and associated chemicals.	I Lot
52	Laboratory Assistance during installation and commissioning of STP plant as required.	I Lot
53	firefighting systems.	As required
54	Utilities- Service and construction water, power, service water etc.,	As required
55	Loading and unloading of Membranes & Equipments & Bringing it from storage to site.	As required
56	Storage of Equipment	As required
57	Eye wash and safety shower.	As required
58	5 ton heavy duty manual Chain pulley for membrane tank area.	1 no.

Table 2: Contract Price Bid - Part A

Sl No	Item	Quantity (W=Working; S= Standby)
59	1 no. of heavy duty chain pulley block of required capacity each for equalization tank,for collection tank pumps and for pump room including all required structural steel supports	3 no.
60	Equipment Lifting system and arrangement for other equipment if required.	As required
61	Treated water transfer pumps.	As required
62	Puddle pipes and insert plates	As required
63	Bulk Chemical storage tanks	As required
64	Equipment anchor bolts.	As required
65	Disposal of membrane preservative.	As required
66	Hydro testing of all field installed piping	As required
67	Emergency lighting.	As required

Table 2: Contract Price Bid - Part A

Sl No	Item	Quantity (W=Working; S= Standby)
68	All other incidental labour and material expenses on account of supplying & installation of above mentioned equipment ,trial run and commissioning of plant ,visits of Technology Provider , installation of air-conditioners in control room and lab;complete as specified in the bid document for completion of Part-A of contract. *Building for control room, site laboratory, pump and panel room, centrifuge room etc. (Architectural plans shall be made available by IITH for reference)	As required
	Lump sum amount quoted for one job of Part-A :(in Figures):	
	in words:	

Part B

PART-B: **Operation and Maintenance of 650 KLD sewage treatment plant

Table 3: Price Bid- Part B

Sl No	Period	Quantity	Unit	Rate in fig.	Rate in words	Amount
1	First year	12 months	Per month			
2	Second year	12 months	Per month			
3	Third year	12 months	Per month			
Lump sum amount quoted for Part-B :(in figures) in words :						

Total amount quoted for Part A plus Part B :

We do hereby quote a lump sum amount of Rs. ..... (in figures) Rs. .....

..... (in words) for completion of entire work (Part A & Part B) as detailed in the scope of work read along with relevant chapters included in the tender document.

Signature of bidder(s)

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Notes on Price Bid

(i) Bidder shall quote a lump-sum amount for all items listed above under Part-A. For Part-B, bidder is required to quote all-inclusive monthly charges for various years of Operation Maintenance.

(ii) Rates shall be quoted in both figures as well as words. In case there is any discrepancy between the rates quoted in figures and words, the rate quoted in words will be considered .

(iii) The quantities and their capacities of equipment listed in the column Item above are indicative and the actual quantities and capacities of the equipment shall be as per detail engineering done by the Contractor duly vetted by the technology provider.

(iv) IITH being educational institution, there will be variation in the quantity of sewage generated depending upon academic activities. The Contractor shall not have any claims if the influent is more than 650 kLD on any day or any period. Similarly, there shall not be any recovery from the Contractor if the quantity of sewage treated is less than 650 KLD on any day or period.

**These are already constructed by IITH and the same shall be handed over to the contractor for installation of electro-mechanical, instrumentation equipment etc. listed in this table2 procured by the bidder. These RCC civil works are included in the list for information only.*

***Power to run the plant during O&M period will be supplied by IITH free of cost to the contractor. The tendered rate shall include all other incidental expenses for carrying out O&M services as specified else-where in the bid document*