

**Minutes of the Pre-bid Meeting held on April 12, 2017 at 11.00 AM at Cochin SEZ Administrative Building,  
Kakkanad, Cochin**

**for**

**Design, Engineering, Supply, Installation, Testing, Commissioning and Operation & Maintenance (O&M) for  
5 Years of Zero Liquid Discharge (ZLD) System with Reverse Osmosis (RO) including Reject Management  
for Common Effluent Treatment Plant (CETP) in Cochin Special Economic Zone (CSEZ), Kakkanad, Cochin**

**NIT No.: WAP/H-3082/CSEZ/IWMS/ZLD/2017 dated the April 03, 2017**

**List of Firms:**

1. M/s ION EXCHANGE India Ltd (Representative: Vijay Bhaskar)
2. M/s ROCHEM Separation Systems (Representative: Jamsheid Mamdapur)
3. M/s Thermax (Representative: T.K.Nair, M/s Southern Carbon)
4. M/s Water Systems India (P) Ltd (Representative: S. Rathan Sakthi)
5. M/s Arvind Envisol Ltd (Representative: P. Maheswaran)

**List of Participants:**

1. A Stephen Leo, WAPCOS
2. V.K.Muhannad, WAPCOS
3. Bipin Kharim, WAPCOS
4. Sarma Kumar, WAPCOS
5. Achal S Khilnani, WAPCOS
6. Riya Salim, WAPCOS
7. Ramakrishnan K C, CSEZ Authority
8. Savio T A, CSEZ Authority

S. No.	Description	Queries	Reply
	<b>FINANCIAL/COMMERCIAL</b>		
1	For supply of equipments/materials, Excise Duty, CST and KVAT shall be avoided since the materials are being procured for use by CSEZ Authority. Required exemption documents and procedure shall be followed by the successful tenderer. If any documents are required from CSEZA for the same, they shall be provided. (Clause No. 4.3, Taxes Page No. 14)	Provide guideline on taxes and duties for imported item. What type of import duties are applicable for supply and O&M contract ?	The taxes and duties on imported items shall be exempted for use by CSEZ Authority. The invoices should be in the name of Chairperson, CSEZ Authority.
2	For installation, testing and commissioning part, service tax will be exempted as the work for CSEZA only. (Clause No. 4.3, Taxes Page No. 14)	Provide tax guideline for O&M contract. Service tax will be applicable or not on every monthly bill cycle.	Being a developer, CSEZ Authority is exempted from Service Tax for O&M Contract.
3	10% on completion of warranty period i.e. twenty four (24) months from the date of commissioning (Clause No. 4.4, Terms of Payment, Page No. 14)	10% payment shall be release against submission of Performance bank guarantee PBG on completion of commissioning.	The conditions as stipulated in NIT prevails. It is clarified that only 10% payment shall be withheld from the date of commissioning for a period of 24 months.

4	Security Deposit will be refunded after satisfactory completion of contract period. (Pg. No. 9, Pt. No. 3.5)	We understand Contract period is Six months for Design, Engineering, Supply, Installation, Testing and Commissioning & Sixty Months for Operation & Maintenance (O&M), so kindly confirm the duration of contract period specified for return of security deposit.	The Security Deposit will be refunded after successful completion of Design, Engineering, Supply, Installation, Testing and Commissioning.
5	Security Deposit	Already our 5% of our payment against Commissioning is under Retention with you, as per the above requested Payment Term breakup. Hence we request you to remove the Security deposit clause for this project	The terms and conditions as stipulated in NIT prevail. It is clarified that only 10% payment shall be withheld from the date of commissioning for a period of 24 months.
6	EMD	Provision of Bank Guarantee for the EMD amount instead of DD. Please confirm.	The terms and conditions as stipulated in NIT prevail.
7	Payment Terms	<p>We request for the below payment terms as against the Payment terms mentioned in the NIT,</p> <ul style="list-style-type: none"> <li>-- 20 % as advance along with LOI / PO</li> <li>-- 10 % against approval of Basic Drawings such as P&amp;ID and Layout</li> <li>-- 60% of Contract value along with all applicable taxes and duties on prorata basis against proforma Invoice as per mutually agreed Billing Schedule.</li> <li>-- 5% against Erection</li> <li>-- 5% against Commissioning</li> </ul>	<p>The revised Terms of Payment are as follows:</p> <p><b>A. Design, Engineering, Supply, Installation, Testing and Commissioning</b></p> <ul style="list-style-type: none"> <li>• 10% of the total cost against submission of bank guarantee of equivalent amount</li> <li>• 20% on submission and approval of design and engineering including GA, layout etc. drawings</li> <li>• 40% on supply of materials/equipments at site</li> <li>• 10% on erection and installation</li> <li>• 10% on testing and commissioning</li> <li>• 10% on completion of warranty period i.e. twenty four (24) months from the date of commissioning</li> </ul>

8	Compensation Clause (Pt. No. 3.14, Pg No. 11 & 12)	Request for revision in liquidated damages	The total value of the liquidated damages as per above shall be limited to a maximum of <b>10% (Ten percent)</b>
9	Warranty of Material (Pt. No. 4.1, Pg No. 13)	We can provide calibration certificate instead of OEM & warranty period as 12 months from date of commissioning or 18 months from date of dispatch whichever is earlier instead of 2 years.	The conditions as stipulated in NIT prevail.
10	Guarantee of work - defects liability period (Pg No. 1, Pt. No. 4.2)	Please confirm.	The conditions as stipulated in NIT prevail.
<b>SCOPE OF SERVICES</b>			
11	Zero Liquid Discharge (ZLD) system with RO of capacity 2.0 MLD including Reject Management is proposed to be installed for the tertiary treated effluent from Common Effluent Treatment Plant (CETP) of existing capacity 1.6 MLD at Cochin Special Economic Zone. (Clause No. 5.0, Scope of Service, Page No. 15)	Zero Liquid Discharge (ZLD) system with RO System to be design at 2 MLD Feed capacity. Please confirm.	Yes, to be designed at 2.0 MLD Feed capacity. Flow for designing the ZLD system to be considered as 2000 m <sup>3</sup> /d.
12	Proposed ZLD scheme (Page No. 15, Pts. No. 5.0)	Equivalent or vendor specific scheme is allowed for RO, we request you to also allow us to choose equivalent scheme for reject management.  Considering the Evaporator Feed Quantity & Quantity can we suggest a suitable Treatment Technology instead of MVRE followed Double Effect Evaporator & ATFD System as specified in the NIT.	The Scope of Services as given in the NIT prevails. The Reject Water scheme as provided in the NIT should be considered.

13	Mentions capacity as 2.0 MLD on pg 15 & Design parameters mentioned capacity as 1500 m <sup>3</sup> /day	Kindly confirm the design capacity for ZLD System whether its 1.5 MLD, 2 MLD or 1.5 MLD up-gradable to 2 MLD.	Please refer reply to Query No. 8.
14	The pre-treatment should remove suspended solids, particulate matter, organics and biological activity. It should consist of self-cleaning disk filter of size 20 μ followed by 1 μ micro-filtration to be provided prior to three stage RO system. (Page No. 15 Pts. No. 5.0)	Can we omit pre-treatment for removal of suspended solids, particulate matter, organics and biological activity.	No. The Scope of Services as given in the NIT prevails.
15	Clause No. 5.0, Scope of Service Page No. 15	<ul style="list-style-type: none"> <li>• Actual recovery of the system shall be based on scaling impurities present (i.e. Hardness, Silica, iron, heavy metals, phosphate etc.) in to the effluent.</li> <li>• Kindly provide analysis report of ETP outlet with following parameters so that we can design our pre-treatment scheme. Hardness, Silica, Sulphate, Chloride, Alkalinity, O&amp;G</li> <li>• Please let us know the Raw Effluent Analysis/ detailed water analysis report on the Existing ETP</li> </ul>	Please refer Annexure - 1
16		Please provide the Treatment Scheme in the Existing ETP	Please refer Annexure – 2.

17		Please clarify whether the proposed ZLD plant will be located within the Existing ETP area or at some other location. Please provide the Overall Plot plan with clearly indicating us the area available for the proposed ZLD system & the Existing ETP	Yes, the proposed ZLD plant shall be located near the existing CETP area.
18		Please provide the End Water application of the Treated Water	For industrial reuse for multi-product units like textile, ceramics, seafood processing, rubber etc. located within the Zone.
19	Agitated thin film dryer (ATFD)	Please confirm the Moisture content of solids at outlet of ATFD.	Approximately 8 to 10%
20	Battery Limits	Please provide the ZLD Plant battery limit for all Mechanical, Electrical & C&I.	The tentative Battery Limits shall be between 5 – 10 m. The exact limits shall be known after the finalisation of site.
21		Please confirm the Plant Operating hours for which the plant has to be designed	24 hours.
22		We request you to exclude Civil & details such as civil structural drawings from Bidder's scope of supply Please confirm	The scope of NIT entails "Concept to Commissioning" which includes Civil Works, civil structural drawings etc in the bidder's scope.
23		Please clarify the availability of Steam for the Evaporator in the Plant Premises. In case if Bidder has to arrange for the Steam , please clarify what type of Fuel should we consider for the Boiler	Provision of Steam for Evaporator shall be in the bidder's scope and fuel shall be natural gas.

24	Boiler (Clause No. 5.0, Scope of Service, Page No. 15 & 16)	Client will provide Steam for Reject management system Within Plant boundary limit at 7 Kg/cm <sup>2</sup> (dry and saturated). Please Confirm.	Please refer reply to Query No. 8.
25	Cooling Tower (Clause No. 5.0, Scope of Service, Page No. 15 & 16)	Client will provide cooling water for Reject management system within Plant boundary limit at 2 to 3 Kg/cm <sup>2</sup> and required flow rate at temperature 32 °C. Please Confirm.	Provision of cooling water for Reject management system shall be in the bidder's scope.
26	Electrical Scope (Clause No. 5.0, Scope of Service Page No. 15 & 16)	Elaborate the scope of work for electrical item i.e HT panel, Transformer, PCC, MCC, cable connection and termination etc.	CSEZA shall only provide the electrical supply point. All other works related to Electrical items shall be in bidder's scope.
27	C&I.	Clarity on C&I i.e type of automation for ZLD system, PLC, Measurement of Instruments.	Bidder should recommend state-of-art C&I system.
<b>OPERATION AND MAINTENANCE</b>			
28	Disposal of reject (Form – 2, Page No – 26)	We assume the disposal of final solid waste will in client's scope. In case it is in bidder's scope, please provide the information about the solid waste disposal facility near site i.e. - transportation charges, distance from site, fee for solid waste disposal.	The Salt/Sludge disposal from the proposed ZLD plant shall be in the bidder's scope. The same should be carried out through authorised agencies of Kerala State Pollution Control Board.
29	Scope of supply (Form – 2, Page No – 26)	Comprehensive O&M (with Consumables) or Non-Comprehensive O&M.	Quote should include Comprehensive O&M (with Consumables, spares, etc).
30		Power, Water, Any Civil Work & Laboratory Facilities shall be provided by Client during the O&M	The Power, Water, any civil works and laboratory shall be provided by the Client on chargeable basis.

31	Power Tariff (Form – 2, Page No – 26)	Provide power tariff per unit	Rs. 5.80 per unit as on date.
32	Power Tariff escalation (Form – 2, Page No – 26)	Difference in Power tariff escalation during O&M period will be paid extra as per Govt. norms.	Yes. Shall be paid as per Government norms.
33	Penalty on power (Form – 2, Page No – 26)	No penalty will be charged towards non-availability of power during O&M. Please Confirm.	Yes.
34	Price bid (Form – 2, Page No – 26)	It is difficult to make total of all above as some values are on per day basis, some values are on monthly basis and total is on five year basis.	Provide rates on monthly basis.
35	Escalation during the O&M (Pg. No. 7, Pt. No. 3.3)	Annual escalation to be considered for O&M rates as the same is to be quoted over 5 years period.	Annual Escalation to a maximum of 10% shall be allowed.
36	The company should provide details of manpower such as qualifications, nos required etc.	Documents will be provided after award of contract to successful bidder. Please confirm.	No. It should be provided as part of technical proposal which shall be considered for technical evaluation.
	<b>ELIGIBILITY CRITERIA</b>		



37	Experience Certificates (Clause No. 2 Pg. No 6,7)	<ul style="list-style-type: none"> <li>• Given requirement of executed work for 1.5 – 2 MLD should be in a single PO / Work Order for ZLD with RO. Please confirm.</li> <li>• Several installations for stage 1 RO in multiple phases which will amount to 1-2 MLD of recycling capacity. We request you to consider experience for such works also. We have also commissioned multiple stage RO's for increased overall recovery in a step to enable client to achieve ZLD. The same was done phase wise and not in a single contract.</li> <li>• Cumulative experience of three projects of similar nature of work</li> </ul>	Single PO/Work Order shall be preferable. However, experience of several installations in multiple phases (phase wise) for the same client in the same location is required.
38	JV/Consortium bids will not be allowed.	Request to bid along with JV/Consortium partner.	The conditions as stipulated in NIT prevail.
39	SCOPE OF SERVICES for Reject water treatment (Clause No. 5 Pg. No 15)	It is clearly mentioned that the proposed reject management system should comprise of Polymeric based Mechanical Vapour recompression (MVR) and in such case no any other technology for Reject water treatment will be accepted. Please confirm.	Yes. The scope of work as stipulated in NIT prevails.
40	SCOPE OF SERVICES (Clause No. 5 Pg. No 15,16)	As per tender requirement we understand that the Technology Provider for ZLD Project can supply the system to the interested Bidders and also can Bid for the same project directly as EPC Contractor. Please Confirm.	Yes.

41	Last date for submission	Extension of Last Date for submission	<ul style="list-style-type: none"><li>• The last date for submission of Tender is hereby extended to <b>May 03, 2017 till 15.00 Hrs.</b></li><li>• The technical bids shall be opened <b>on the same day at 15.30 Hrs.</b></li><li>• No further extension shall be considered.</li></ul>
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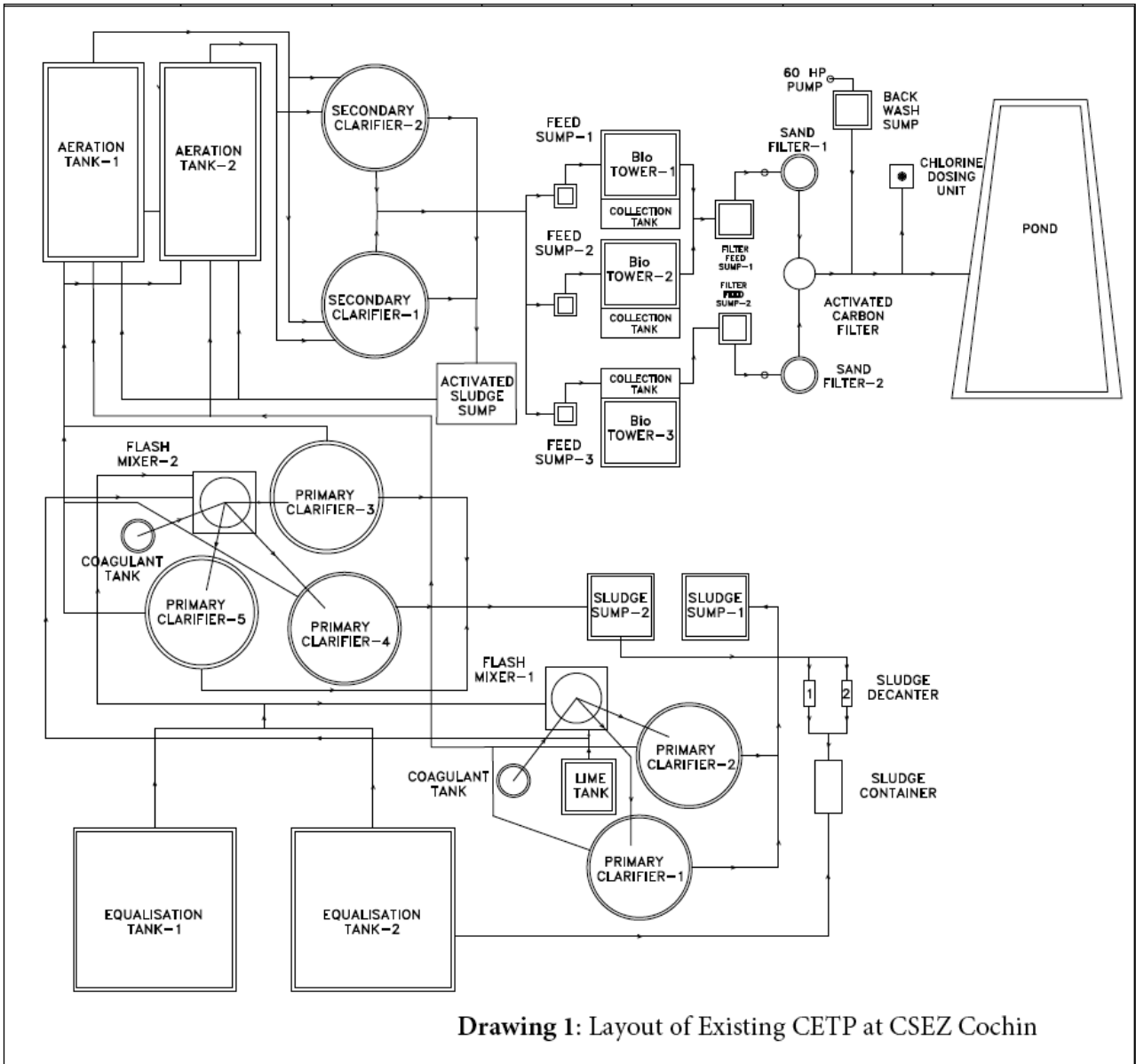
**Note:** The details of evaluation are given in Annexure – 3.

## Annexure - 1

### Physico-chemical characteristics of Effluent at Existing CETP as per studies done by NEERI

S. No.	Parameters (in mg/L except pH)	Raw Influent	Final Outlet
1.	pH	7.2 – 8.0	7.3 - 7.7
2.	Suspended solids	142 - 300	6.0 - 65
3.	Total dissolved solids	1074 - 3520	1295 - 1462
4.	TKN	84 - 120	19.6 – 44.0
5.	Total Phosphates as P	2.0 - 4.4	1.4 - 2.2
6.	COD	576 - 1056	72 - 168
7.	BOD	214 - 410	30 - 60
<b>Heavy Metals</b>			
1.	Iron (as Fe)	0.6725 - 5.008	0.038 - 1.200
2.	Lead (as Pb)	0.006 - 0.158	0.001 - 0.009
3.	Cadmium(as Cd)	0.0 - 0.008	0.0 - 0.002
4.	Total Chromium(as Cr)	0.03 - 0.244	0.007 - 0.078
5.	Copper (as Cu)	0.01 - 0.668	0.017 - 0.008
6.	Zinc (Zn)	0.76 - 6.280	0.007 - 0.075
7.	Nickel (Ni)	0.0 - 0.0642	0.0 - 0.065
8.	Manganese	0.79 - 1.537	0.012 - 0.238

## Annexure – 2: Layout of Existing CETP



### Annexure – 3

#### **Selection/Evaluation Process**

**1.0 Brief description of the selection process:** A two stage selection process will be adopted in evaluating the bids. In the first stage, a qualification cum technical evaluation will be carried out followed by a financial evaluation in the second stage.

**2.0 Criteria for evaluation: Qualification cum Technical proposals:** The bid will be evaluated on the basis of the experience of the companies. Only those companies whose bids score 75 marks or more out of 100 shall qualify for the second stage.

The scoring criteria to be used for evaluation shall be as follows:

<b>Sl. No.</b>	<b>Scoring criteria</b>		<b>Marks</b>	<b>Maximum marks</b>
1	Satisfactory completion of Design, Engineering, Installation and Commissioning of similar capacity (1.5 – 2.0 MLD) or more of ZLD system with RO including Reject Management for CETP. Completion certificates are to be enclosed.	One similar work for CETP	20	40
		Two or More similar works for CETP	30	
		Similar work for CETP in multi-product industrial zone	40	
2	Satisfactory completion of O&M of similar capacity or more of ZLD system with RO including Reject Management for CETP. Completion certificates are to be enclosed.	One similar work	10	20
		Two or More similar works	15	
		Similar work for CETP in multi-product industrial zone	20	
3	Capability	Availability of Experienced/Qualified Engineers/staff		15
4	Turnover for last three consecutive financial years	Upto Rs. 50.0 Crores	10	20
		Between Rs.50.0 – 100.0 Crores	15	
		Above Rs. 100.0 Crores	20	

5	Certifications i.e ISO, Accreditation with national and international organizations etc			5
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**3.0 Evaluation of Financial proposals:** Only the financial bids of technically qualified companies who score 75% or more marks in technical evaluation shall be opened. The price envelopes of others will not be considered and returned unopened after completing the selection process.

The lowest financial proposal (Fm) will be given a financial score (Sf) of 100 points. The financial scores of all the proposals will be computed as follows:

$$Sf = 100 \times Fm/F \text{ (F - amount of financial proposal).}$$

Proposals will finally be ranked according to their combined technical (St) and financial (Sf) scores using a weightage of 75% for technical proposal and 25% for financial proposal.

$$S = St \times 0.75 + Sf \times 0.25$$

The Firm securing the highest score will be invited for negotiations.