SECURITY PAPER MILL

HOSHANGABAD (M.P.)
(A unit of Security Printing & Minting Corporation of India Ltd.)
Wholly owned by Government of India

TENDER DOCUMENT

FOR

DESIGN, SUPPLY, CONSTRUCTION, INSTALLATION & COMMISSIONING AND OPERATION & MAINTENANCE FOR 03 UNIT OF 1500 KLD ZERO LIQUID DISCHARGE (ZLD) STATE-OF-THE-ART SYSTEM WITH PRE-TREATMENT, ULTRA-FILTRATION AND 2-STAGE REVERSE OSMOSIS (RO) PLANT AT SECURITY PAPER MILL (SPM), HOSHANGABAD ON TURNKEY BASIS.

प्रतिभूति कागज कारखाना, होशंगाबाद–461 005 (म.प्र.)
(भारत प्रतिभूति मुद्रण तथा मुद्रा निर्माण निगम लिमिटेड की इकाई)
भारत सरकार के पूर्ण स्वामित्वाधीन
मिनीरत्न श्रेणी – I सीपीएसई एवं आई.एस.ओ. 9001 : 2008 एवं आई.एस.ओ. 14001 : 2004 प्रमाणित
SECURITY PAPER MILL , HOSHANGABAD - 461 005 (M.P.)
(A Unit of Security Printing & Minting Corporation of India Ltd.)
Wholly owned by Government of India
Miniratna Category - I CPSE & ISO 9001 : 2008 & ISO 14001 : 2004 CERTIFIED
CIN : U22213DL2006GOI144763, VAT/TIN NO : 23134202419 & EXCISE ASSE. CODE : AAKCS4610BXM001
Tel. No. : 07574-255259 Fax No. : 07574-255170 E-mail : gm.spm@spmcil.com Website : http://spmhoshangabad.spmcil.com

RIGHT TO INFORMATION

Not Transferable

DESIGN, SUPPLY, CONSTRUCTION, INSTALLATION & COMMISSIONING AND OPERATION & MAINTENANCE FOR 03 UNIT OF 1500 KLD ZERO LIQUID DISCHARGE (ZLD) STATE-OF-THE-ART SYSTEM WITH PRE-TREATMENT, ULTRA-FILTRATION AND 2-STAGE REVERSE OSMOSIS (RO) PLANT AT SECURITY PAPER MILL (SPM), HOSHANGABAD ON TURNKEY BASIS.

File No. SPM/ZLD/2366 **Dated: 28.02.2018**

This Tender Document Contains 86 Pages

Tender Documents is sold to:

M/s _____

Address _____

Details of Contact person in SPMCIL regarding this tender:

Name, Designation	**:**	**KISHOR MANE** **Assistant Manager (Material)**
Address	**:**	**Security Paper Mill** **Hoshangabad M.P-461005**
Phone	**:**	**07574-279041-60*6847**
Fax	**:**	**07574-255170**
Email	**:**	**Shailendrasingh.rajput@spmcil.com/ kishor.mane@spmcil.com** **purchase.spm@spmcil.com**

प्रतिभूति कागज कारखाना, होशंगाबाद–461 005 (म.प्र.)
(भारत प्रतिभूति मुद्रण तथा मुद्रा निर्माण निगम लिमिटेड की इकाई)
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RIGHT TO INFORMATION

(SECTION – I)

NOTICE INVITING TENDER

File No. SPM/ZLD/2366 **Dated: 28.02.2018**

1. Sealed tenders are invited from eligible and qualified tenderers for supply of following goods & services.

Schedule No.	Brief Description of Goods/ Services	Quantity (with unit)	Earnest Money Deposit (in Rs.)
1	Design, Supply, Construction, Installation & Commissioning And Operation & Maintenance for 1500 KLD Zero Liquid Discharge (ZLD) State-Of-The-Art System with Pre-Treatment, Ultra-Filtration And 2-Stage Reverse Osmosis (RO) Plant At Security Paper Mill (SPM), Hoshangabad On Turnkey Basis.	03 Nos.	Rs. 70,80,000/- Or USD 111200

Type Of Tender	**Single stage (three packet), ICB Open tender**
Dates of sale of tender documents	**From 01.03.2018 to 23.04.2018 up to 17.00 hours. (IST)**
Price of the Tender Document	**Rs. 1000 per set or USD 16**
Place of sale of tender documents	**Security Paper Mill, Hoshangabad**
Date and time of Pre-bid conference	**26.03.2017 at 11.00 AM**
Place of Pre-bid conference	**Security Paper Mill, Hoshangabad**
Closing date and time for receipt of tenders	**Up to 11.00 Hrs (IST) on 24.04.2018**
Place of receipt of tenders	**Security Paper Mill, Hoshangabad**
Time and date of opening of tenders	**At 15.00 Hrs. (IST) on 24.04.2018**
Place of opening of tenders	**Security Paper Mill, Hoshangabad (M.P.)**
Nominated Person/ Designation to receive Tender	**Assistant Manager (Material)**

2. Interested tenderers may obtain further information about this requirement from the above office selling the documents. They may also visit our website mentioned above for further details.

3. Tender documents may be purchased on payment of non-refundable fee of Rs 1000/- per set or USD 16 in the form of account payee demand draft/ cashier's cheque/ certified cheque, drawn on a scheduled commercial bank in India, in favour of SECURITY PAPER MILL payable at HOSHANGABAD.

4. Tenderer may also download the tender documents from the web site http://spmhoshangabad.spmcil.com and http://eprecure.gov.in and submit its tender by utilizing the downloaded document, along with the required non-refundable fee.

5. If requested, the tender documents will be mailed by registered post/ speed post to the domestic tenderers, for which extra expenditure per set will be Rs.100/- for domestic post. The tenderer is to add the applicable postage cost in the non-refundable fee mentioned in Para 3 above.

6. In the event of any of the above mentioned dates being declared as a holiday/ closed day for the purchase organization, the tenders will be sold/ received/ opened on the next working day at the appointed time.

7. SUBMISSION OF TENDER: The bid is to be submitted as follows:-

Pre-Qualification bid, Techno-commercial bid and financial bid are to be submitted in three separate doubled sealed envelopes on or before the due date of submission of tenders. It may be noted that the price is not to be quoted either in the pre-qualification or in Techno- commercial bid. It shall only be quoted in price bid. Non-adherence to this shall be making tender liable for rejection. The envelopes containing bids shall be superscribed **"Pre-qualification bid", "Techno-commercial bid", and "Price bid".** The sealed envelopes shall be again put in another sealed cover and should be superscribed the sealed envelopes shall be again put in another sealed cover and should be superscribed **"DESIGN, SUPPLY, CONSTRUCTION, INSTALLATION & COMMISSIONING AND OPERATION & MAINTENANCE FOR 03 UNIT OF 1500 KLD ZERO LIQUID DISCHARGE (ZLD) STATE-OF-THE-ART SYSTEM WITH PRE-TREATMENT, ULTRA-FILTRATION AND 2-STAGE REVERSE OSMOSIS (RO) PLANT AT SECURITY PAPER MILL (SPM), HOSHANGABAD ON TURNKEY BASIS."** due on **24.04.2018 up** to **11.00 Hrs. (IST).** Late tenders shall not be accepted. Tenderers shall submit their offers only on prescribed forms. Tender by Telegram/Fax/E-mail shall not be accepted. Tender by Post/Hand/courier received on or before the due date and time shall be accepted. Postal delay/ delay by courier service etc. shall not be condoned. The Tenders shall be submitted in single copy.

PART – I: PRE-QUALIFICATION BID

(A) For Non MSME Firms

i. Containing un-priced tender consisting of complete Qualification/Eligibility of the tenderer as per the format specified under **Section IX** in this document.
ii. One original Tender copy shall be submitted. It should not have any price aspects.
iii. Earnest Money Deposit as per tender enquiry.
iv. Power of Attorney/ Authorization with the seal of the company of person signing the tender documents.
v. Tender document fee **Rs. 1000/- or USD 16.**
vi. Manufacturer Authorization form, if the bidder is not a manufacturer.
vii. Financial Standings of the last three (3) years, ending 2014, 2015 and 2016 in case the financial year is maintained calendar year wise; or 2014-15, 2015-16 and 2016-17 in case the financial year is maintained ending 31st March 2017.
viii. Duly filled tender form as per Section-X is to be submitted. No price detail is to be given in this bid. In case if any price detail is given, then the bids are liable to be rejected.
ix. Firm has to submit the Section XX (Integrity Pact), with Seal & Sign along the PQB.

(B) For MSME Firms:

i. Firm shall submit the valid MSME certificate and the tendered item must be listed in the MSME certificate store list. Non-submission of valid MSME certificate and non-availability of the tendered item in the store list of this certificate shall lead to rejection of the offer.

ii. One original Tender copy shall be submitted. It should not have any price aspect.

iii. Power of Attorney/Authorization with the seal of the company of person signing the tender documents.

iv. Duly filled tender form as per Section-X is to be submitted. No price details are to be given in this bid. In case if any price detail is given, then the bids are liable to be rejected.

v. If required SPM may visit the factory during PQB stage, to ascertain the bidder manufacturing capability & quality control methodology.

Firm should submit the following:-

a) Infrastructure details
b) Plant & Machinery list
c) Organization structure

vi. Firm has to submit the Section XX(Integrity Pact), with Seal & Sign along the PQB.

PART II - TECHNO-COMMERCIAL BID

i) The tenderer shall submit detailed technical offer as per Technical Specifications as per Section VII of this tender document.
ii) The tenderer has to submit acceptance of all the terms & conditions of the tender documents without any deviation.
iii) Containing un-priced tender consisting commercial package including all terms and conditions. No price details to be given in the Techno-Commercial Bid.
iv) Containing Blank price Bid (No price details to be given in this tender.)

PART- III - PRICE BID:

The tenderers shall quote the prices as per the Performa given in Section - XI of the tender document. Insertion, post script, addition and alteration shall not be recognized unless confirmed by the tenderers.

9. In case of order value is Rs. 1,50,000/- or above, the supplier shall furnish the performance security amount/ Security Deposit(S.D) (10% of the ordered value) before supply of material after issue of Purchase order by SPM, Hoshangabad in favour of The Security Paper Mill payable at Hoshangabad. The performance security will be return back without any interest to successful tenderer after the completion of all contractual obligations.

10. NO EXEMPTION WILL BE GIVEN FOR DEPOSITING OF SECURITY DEPOSIT (S.D.) TO ANY DIC/SSI/MSME/NSIC REGISTERED FIRM.

11. EXEMPTION WILL BE GIVEN FOR DEPOSITING OF ONLY TENDER FEE & EMD TO ANY DIC/SSI/MSME/NSIC REGISTERED FIRM

Special Instruction: -

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i. Micro and Small Enterprises firm are exempted from submitting Tender fees and Earnest Money deposit. Please send the copy of valid registration certificate of Micro and Small Enterprises along with bid / quotation otherwise your offer will not be considered for above exemption.

ii. Price quotation in tenders:

a. In tender, participating Micro and Small Enterprises quoting price within price band of L1 + 15 per cent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise and such Micro and Small Enterprise shall be allowed to supply up to 20 per cent of total tendered value. (For the splitable items)

b. In case of more than one such Micro and Small Enterprise, the supply shall be shared proportionately (to tendered quantity). (For the splitable items)

c. Special provisions for micro and small enterprises owned by SC or ST: Out of 20 per cent allowed for procurement from Micro and Small Enterprises, a sub-target of 20 per cent (i.e. 4 per cent out of 20 per cent) shall be allowed for procurement from Micro and Small Enterprises owned by the Scheduled Caste or the Scheduled Tribe entrepreneurs. Provided that, in event of failure of such Micro and Small Enterprises to participate in tender process or meet tender requirements and L1 price, 4 per cent sub-target for procurement earmarked for Micro and Small Enterprises owned by Scheduled Caste or Scheduled Tribe entrepreneurs shall be met from other Micro and Small Enterprises. (For the splitable items)

d. Relaxation of Norms for Startups and Micro & Small Enterprises on Prior experience and prior turnover criteria:
In exercise of Para 16 of Public Procurement Policy for Micro and Small Enterprises Order 2012, Security Paper Mill, Hoshangabad has relaxed the condition of prior turnover and prior experience with respect to Micro and Small Enterprises subject to meeting of quality and technical specifications.

e. In case tender item have non-split able or non-dividable, etc. MSE quoting price within price band L1+15% may be awarded for full */* complete supply of total tendered value to MSE by bringing down their price to L1.

Note:
(1) All other terms and conditions of NIT (including GIT, SIT, GCC & SCC) shall be remain as per our procurement manual.

(2) General instructions to tenderer (GIT) and General Conditions of contract (GCC) shall also form a part of this tender document. For details regarding GIT and GCC please refer links as below:

http://spmhoshangabad.spmcil.com/spmcil/uploaddocument/GIT.pdf
http://spmhoshangabad.spmcil.com/spmcil/uploaddocument/GCC.pdf

SECTION - II to XIX : APPLICABLE, EXCEPT SECTION : XIII & XVIII. SECTION -XIII BANK GUARANTEE FORM FOR EMD : NOT APPLICABLE
SECTION XVIII SHIPPING ARRANGEMENTS FOR LINER CARGOES: APPLICABLE

IMPORTANT NOTE:-

1. BIDDER TO FURNISH STIPULATED DOCUMENTS ALONG WITH TENDER IN SUPPORT OF FULFILLMENT OF TENDER CRITERIA. FURTHER CORRESPONDENCE IN THIS REGARD WILL NOT BE ENTERTAINED FOR ANY REASON. NON-SUBMISSION OR INCOMPLETE SUBMISSION OF DOCUMENTS MAY LEAD TO REJECTION OF OFFER.

2. The tender documents are not transferable.

3. SPM has Right to Accept any Tender and to Reject any or All Tenders. SPM reserves the right to accept in part or in full any tender or reject any tender without assigning any reason or to cancel the tendering process and reject all tenders at any time prior to award of contract, without incurring any liability, what so ever to the affected tenderer or tenderers.

FIRM SHOULD STRICTLY FOLLOW THE CONDTIONS AND ACTS MENTIONED BELOW:-

I) **Safety Conditions**

(1) The work has to be carried out under proper supervision and all safety rules and regulations should be followed and also as per direction of our officials.

(2) You have follows all safety norms and labour law act police verification of your employees, insurance, without which your employees can not permitted for work in our premises.

(3) It will be sole responsibility of the contractor to insure yours workmen against risks of accident and injury while at work as required by the relevant rules and to pay compensation, if any to them as per workmen's compensation act. the work will be carried out in a protected area and all the rules and regulations of S.P.M. in that area that are in force from time to time will have to be followed by the contractor.

(4) The contractor shall assign to his workmen task commensurate with their experience and state health condition.

II) **Other Important Conditions:**

The Contractor shall be abide by the following Acts:

1. The Contract Labour (R&A) Act, 1970
2. The Provident Fund & Misc. Provisions Act#1952
3. The Minimum Wages Act, 1948
4. The Payment of Wages Act, 1936
5. The Employee Compensation Act, 1923

Encl.:1. Annexure- A (Checklist)

(KISHOR MANE)
Assistant Manager (Material)
For General Manager

CORRESPONDING ADDRESS

THE GENERAL MANAGER
SECURITY PAPER MILL
HOSHANGABAD-461 005 (M.P.)
Website: http://spmhoshangabad.spmcil.com
E-MAIL:- gm.spm@spmcil.com; purchase.spm@spmcil.com
PHONE :- (07574)-279041-60*6847, 6791, 6776
FAX: - (07574)-255170

SIGNATURE OF BIDDER WITH NAME,
DESIGNATION & SEAL

(SECTION – II)

GENERAL INSTRUCTION TO TENDERERS

Kindly refer http://spmhoshangabad.spmcil.com/spmcil/uploaddocument/GIT.pdf for further details.

(GIT contains 32 pages)

SPECIAL INSTRUCTION TO TENDERER

The following Special Instructions to Tenderers will apply for this purchase. These special instructions will modify/substitute/ supplement the corresponding General Instructions to Tenderers (GIT) incorporated in Section II. The corresponding GIT clause numbers have also been indicated in the text below. In case of any conflict between the provision in the GIT and that in the SIT, the provision contained in the SIT shall prevail.

Sl. No.	GIT Clause No.	Topic	SIT Provision
1	8	Pre-bid Conference	1
2	18	Earnest Money Deposit (EMD)	2
3	19.1	Tender Validity	3
4	33	Evaluation Criteria for L1 Bidder	4
5	11.2	Tender Currency	5
6	34	Comparison on CIF destination Basis	6
7		Award Criteria	7

1. PRE-BID CONFERENCE

Pre-bid conference will be held on **26.03.2018 at 11 AM** for this tender at SPM Hoshangabad. Bidder should send their query (if any) vide email before one week of pre-bid conference.

2. EARNEST MONEY DEPOSIT (EMD)

The earnest money of INR 70, 80,000/- or USD 111200 shall be furnished in one of the following forms.

a) Bank Guarantee or (BG should be in Indian currency and issued from scheduled commercial bank.)
b) Fixed Deposit Receipt or
c) Bankers cheque or
d) Account Payee Demand Draft

The demand draft, fixed deposit receipt or bankers cheque shall be drawn on any scheduled commercial bank in India, in favour of Account specified in the Clause 3 of NIT. In case of bank guarantee, the same is to be provided from/confirmed by any scheduled commercial bank in India as per the format specified under Section XIII in these documents. The earnest money shall be valid for a period of forty five days beyond the validity period of the tender.

2. TENDER VALIDITY

2.1. The tender shall remain valid for acceptance for a period of 165 days after the date of tender opening prescribed in the tender document. Any tender valid for a shorter period shall be treated as unresponsive & rejected.

2.2. In exceptional cases, the tenderers may be requested by SPM to extend the validity of their tenders up to a specified period. Such request (s) and responses thereto shall be conveyed by E-mail/Registered Post/Fax followed by surface mail. The tenderers, who agree to extend the tender validity, are to extend the same without any change or modification of their original tender and they are also to extend the validity period of the EMD accordingly.

2.3. In case the day up to which the tenders are to remain valid falls on/subsequently declared holiday or closed day for SPM, the tender validity shall be extended up to the next working day.

2.4. **Compliance with the clauses of this Tender document:**
Tenderer must comply with all the clauses of this tender document. No deviations with any of the clauses of this tender are permitted to the bidder.

4. EVALUATION CRITERIA FOR L1 BIDDER

The pre-qualification bids are to be opened in the first instance, at the prescribed time and date. These bids shall be scrutinized and evaluated by the competent committee/ authority with reference to the parameters prescribed in the eligibility criteria. Thereafter, in the second stage, the Techno-commercial bids of only pre-qualified bidders (as decided in the first stage) shall be opened at a later date and time for further scrutiny and further evaluation. These bids shall be scrutinized and evaluated by the competent committee/ authority with reference to the parameters prescribed in the tender document. Subsequently, in the third stage the financial bids of only the Techno-commercially acceptable offers (as decided in the second stage) shall be opened for further scrutiny and evaluation. Intimation regarding opening of Techno-commercial and financial bids shall be given to acceptable Tenderers to enable them to attend the Techno-commercial and financial bid opening, if they so desire.

All responsive tenders shall be evaluated as per the terms and conditions of this tender. The basis for arriving at the lowest responsive bidder shall be as per the price comparison for deliveries up to SPM, Hoshangabad.

The method of evaluation of L1 criteria for awarding the contract shall be on consolidate offer submit by the bidder and be decided taking into consideration of total offered price as per section - XI of this tender document.

5. TENDER CURRENCY

Supplier is requested to quote price within 2 Decimal place. Quotation with price quote beyond 2 decimal place is ignored.

- Bidders offering domestic goods shall quote only in Indian Rupees (INR).
- Bidders offering imported goods shall quote either in Indian Rupees (INR) or in USD.
- Tenders, where prices are quoted in any other way shall be treated as unresponsive and rejected.

6. COMPARISON ON CIF DESTINATION BASIS

Price bid evaluation:-

i. In case of indigenous offers, the prices quoted shall be compared on a total price basis (FOR SPM Hoshangabad), including all taxes, duties, packing & Forwarding charges, Freight, Insurance, etc., as per the price schedule.

ii. In case of imported offers, the tenderer will be required to quote on FOB as well as CIF basis. The CIF price shall be multiplied with the exchange rate between INR and quoted foreign currency, prevailing on the date of opening of the price bid (i.e. Financial Bid). The applicable rate will be- BC selling rate of State Bank of India. Customs Duty and countervailing duty/IGST (Current Custom Duty is 10.5 % and IGST is 18%) having custom tariff no. **CTH 84212900** as applicable on accessible value (CIF+ landing charges etc.,) will then be added on the CIF price, thus converted in to Indian Currency. On this converted price 1 % shall be added for port clearance, forwarding charges and estimated inland freight up to destination to arrive at the total price. For comparison of Import offer with indigenous offer, total landed cost of indigenous offer, shall be compared with the total landed cost of import offer. The tenders received and accepted will be evaluated to ascertain the best and lowest evaluated tender in the interest of the purchaser, for the complete supply covered under the tender document.

7. **AWARD CRITERIA**: All responsive tenders shall be evaluated as per the terms and conditions of this tender. The basis for arriving at the lowest responsive bidder shall be as per the total price comparison for deliveries up to SPM, Hoshangabad on F.O.R basis. However the purchaser reserves the right to place order on the firm for FOB seaport/ CIF Sea Port FCA/ DAP airport as well.

NOTE:

"BIDDER TO FURNISH STIPULATED DOCUMENTS ALONG WITH TENDER IN SUPPORT OF FULFILLMENT OF TENDER CRITERIA. FURTHER CORRESPONDENCE IN THIS REGARD WILL NOT BE ENTERTAINED FOR ANY REASON. NON-SUBMISSION OR INCOMPLETE SUBMISSION OF DOCUMENTS MAY LEAD TO REJECTION OF OFFER."

SIGNATURE OF BIDDER WITH NAME,
DESIGNATION & SEAL

(SECTION-IV)

GENERAL CONDITIONS OF CONTRACT

Kindly refer http://spmhoshangabad.spmcil.com/spmcil/uploaddocument/GCC.pdf for further details.

(GCC contains 28 pages)

(SECTION-V)

SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract (SCC) will apply for this purchase. The corresponding clauses of General Conditions of Contract (GCC) relating to the SCC stipulations have also been incorporated below. These Special Conditions will modify/ substitute/ supplement the corresponding (GCC) clauses. Whenever there is any conflict between the provision in the GCC and that in the SCC, the provision contained in the SCC shall prevail.

(Clauses of GCC listed below include a possibility for variation in their provisions through SCC. There could be other clauses in SCC as deemed fit)

Sl. No.	GCC Clause No.	Topic	SCC Provision
1	19.3	Option clause	1
2	22.1	Payment Terms	2
3	24.1	Quantum of LD	3
4	16.1,16.2,16.3,16.4	Warrantee Clause	4
5	33.1	Resolution of Disputes	5

1. OPTION CLAUSE

The Purchaser reserves the right to place an option order for **25%** of the quantity of the final order on the same rates, terms and conditions till final delivery date of the contract by giving reasonable notice even though the quantity ordered initially has been supplied in full before the last date of delivery period.

2. PAYMENT TERMS

Sl. No.	Description	Payment terms for Indigenous Bidder	Payment terms for Foreign/Overseas Bidder
(A)			
1.	Supply and construction of prefab building including foundations, platforms, illuminations, ventilation etc.	• Foundation including piling- 10% • Plinth height (3.5 m)- 20% • Roof work completion- 30% • Final completion- 30% • After final acceptance of Phase-1: 10%	• 10% payment shall be made through LC after completion of Foundation including piling. • 20 % payment shall be made through LC after completion of Plinth height (3.5 m)- • 30 % payment shall be made through LC after completion of Roof work completion. • 30 % payment shall be made through LC after completion of Final completion- 30%

			• 10 % payment shall be made through LC after completion of final acceptance of Phase-1.
2.	Supply and construction of utility buildings including fans and lightings.	• Foundation including piling- 10% • Plinth height- 20% • Roof work completion- 30% • Final completion: 30% • After final acceptance of Phase-1: 10%	• 10 % payment shall be made through LC after completion of Foundation including piling. • 20 % payment shall be made through LC after completion of Plinth height. • 30 % payment shall be made through LC after completion of Roof work completion. • 30 % payment shall be made through LC after completion of Final completion. • 10 % payment shall be made through LC after completion of final acceptance of Phase-1.
3.	Furniture & fixtures	• After receipt of the material: 80% • After final acceptance of Phase-1: 20%	• 80 % payment shall be made through LC after receipt of the material. • 20 % payment shall be made through LC after final acceptance of Phase-1.
4.	Supply and construction of storage tanks	• Foundation: 30% • Final completion: 50% • After final acceptance of Phase-1: 20%	• 30 % payment shall be made through LC after completion of Foundation. • 50 % payment shall be made through LC after Final completion • 20 % payment shall be made through LC after completion of final acceptance of Phase-1.
(B)			
5.	Supply and installation of electrical items including laying of power & control cables and motor control Centre (MCC) and power control Centre (PCC) common for all the three phases.	• After receipt of the material: 80% • After final acceptance of Phase-1: 20% of the materials, and installation & commissioning charges.	• 80 % payment shall be made through LC after receipt of the material. • 20% of the materials, and installation & commissioning charges shall be paid through LC after final acceptance of Phase-1.
6.	Supply of control room hardware (servers, PLC, SCADA, HMI, etc.) and software, programs common for all three phases.	• After receipt of the material: 80% • After final acceptance of Phase-1: 20% of the materials, and installation &	• 80 % payment shall be made through LC after receipt of the material. • 20% of the materials, and installation &

		commissioning charges.	commissioning charges shall be paid through LC after final acceptance of Phase-1.
7.	Supply, setting up, installation and commissioning of Water Testing laboratory including equipment, glassware, chemicals.	• After receipt of the material: 80% • After final acceptance of Phase-1: 20% of the materials, and installation & commissioning charges.	• 80 % payment shall be made through LC after receipt of the material. • 20% of the materials, and installation & commissioning charges shall be paid through LC after final acceptance of Phase-1.
8.	Supply, installation & commissioning of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-1 including all the required equipment, instruments etc.	• After receipt of the material: 80% • After final acceptance of Phase-1: 20% of the materials, and installation & commissioning charges.	• 80 % payment shall be made through LC after receipt of the material. • 20% of the materials, and installation & commissioning charges shall be paid through LC after final acceptance of Phase-1.
9.	Operation and maintenance (manpower deployment and technical services) of finally accepted unit of each phase for a warranty period of 1 year. Spares shall be supplied by the tenderer free of cost during the warranty period.	• Monthly payment after satisfactory execution of the job and fulfillment of statutory norms like PF, ESI etc.	• Monthly payment shall be paid through LC after satisfactory execution of the job and fulfillment of statutory norms like PF, ESI etc.
10.	Supply & plantation of 200 nos. of coconut plants along the perimeter wall inside the SPM boundary (approx. 2 KM) with suitable pumping, pipeline for drip irrigation facility.	• After completion of plantation along with drip irrigation system: 80% • After 1 year of warranty period: 20% (with minimum survival rate of 90%)	• 80 % payment shall be made through LC after completion of plantation along with drip irrigation system. • 20 % payment shall be made through LC after completion of 1 year of warranty period. (With minimum survival rate of 90%)
11.	Supply & plantation of 1000 nos. of plants along with land preparation and watering system.	• After completion of plantation along with watering system: 80% • After 1 year of warranty period: 20% (with minimum survival rate of 80%)	• 80 % payment shall be made through LC after completion of plantation along with drip irrigation system. • 20 % payment shall be made through LC after completion of 1 year of warranty period. (With minimum survival rate of 90%)
12.	Supply, installation & commissioning of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-2 including all the required equipment, instruments etc.	• After receipt of the material: 80% • After final acceptance of Phase-2: 20% of the materials, and installation & commissioning charges.	• 80 % payment shall be made through LC after receipt of the material. • 20% of the materials, and installation & commissioning charges shall

			be paid through LC after final acceptance of Phase-2.
13.	Operation and maintenance (manpower deployment, service) of finally accepted unit of Phase-2 for a warranty period of 1 year. Spares, if required, shall be supplied free of cost during the warranty period.	• Monthly payment after satisfactory execution of the job and fulfillment of statutory norms like PF, ESI etc.	• Monthly payment shall be paid through LC after satisfactory execution of the job and fulfillment of statutory norms like PF, ESI etc.
14.	Supply & plantation of 1000 nos. of plants along with land preparation and watering system.	• After completion of plantation along with watering system: 80% • After 1 year of warranty period: 20% (with minimum survival rate of 80%)	• 80 % payment shall be made through LC after completion of plantation along with drip irrigation system. • 20 % payment shall be made through LC after completion of 1 year of warranty period. (With minimum survival rate of 90%)
15.	Supply, installation & commissioning of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-3 including all the required equipment, instruments etc.	• After receipt of the material: 80% • After final acceptance of Phase-3: 20% of the materials, and installation & commissioning charges.	• 80 % payment shall be made through LC after receipt of the material. • 20% of the materials, and installation & commissioning charges shall be paid through LC after final acceptance of Phase-3.
16.	Operation and maintenance (manpower deployment, service) of finally accepted unit of Phase-3 for a warranty period of 1 year. Spares, shall be supplied free of cost during the warranty period.	• Monthly payment after satisfactory execution of the job and fulfillment of statutory norms like PF, ESI etc.	• Monthly payment shall be paid through LC after satisfactory execution of the job and fulfillment of statutory norms like PF, ESI etc.
17.	Supply & plantation of 1000 nos. of plants along with land preparation and watering system.	• After completion of plantation along with watering system: 80% • After 1 year of warranty period: 20% (with minimum survival rate of 80%)	• 80 % payment shall be made through LC after completion of plantation along with drip irrigation system. • 20 % payment shall be made through LC after completion of 1 year of warranty period. (With minimum survival rate of 90%)

3. <u>QUANTUM OF LD:</u>

Supplier fails to deliver any or all of the goods or fails to perform the services within the time frame incorporated in the contract. SPM, Hoshangabad shall, without prejudice to other rights and remedies available to SPM, Hoshangabad under the contract, deduct from contract price, as liquidated damages, as sum equivalent to the 0.5% of the delivered price of the delayed goods and/or services for each week of delay or part thereof until actual delivery or

performance, subject to a maximum deduction of the 10% (or any other percentage if prescribed in the SCC) of the delayed goods or services of contract price.

4. <u>WARRANTEE CLAUSE:</u>

16.1. The supplier warrants that the goods supplied under the contract is new, unused and incorporate all recent improvements in design and materials unless prescribed otherwise by SPM in the contract. The supplier further warrants that the goods supplied under contract shall have no defect arising from design, material or workmanship or from any act or omission of the supplier that may develop under normal use of the supplied goods.

16.2. Warrantee shall remain valid for 12 months after the goods have been delivered to the final destination and accepted by SPM in terms of the contract or for 15 months or more from the date of dispatch (whichever is later).

16.4 If claim arising out of this warranty, supplier shall repair or replace the defective goods or parts thereof, free of cost, at the ultimate destination. The supplier shall take over the replaced parts/goods after providing their replacement and no claim, whatsoever shall lie on SPM for such replaced parts/goods thereafter.

16.6 If the supplier, having been notified, fails to rectify/replace the defects within a reasonable period, SPM may proceed to take such remedial action as deemed fit by SPM, at the risk and expense of the supplier and without prejudice to other contractual rights and remedies, which SPM may have against the supplier.

5. RESOLUTION OF DISPUTES

If dispute or difference of any kind shall arise between SPM, Hoshangabad and the supplier in connection with or relating the contract, the parties shall make every effort to resolve the same amicably by mutual consultations. If the parties fail to resolve their dispute or difference by such mutual consultation within 21 days of its occurrence, then, unless otherwise provided in the SCC, either SPM, Hoshangabad or the supplier may seek recourse to settlement of disputes through arbitration act 33.2.

(SECTION-VI)

LIST OF REQUIREMENTS

Schedule No.	Brief Description of Goods/ Services	Quantity (with unit)	Earnest Money Deposit (in Rs.)
1	Design, Supply, Construction, Installation & Commissioning And Operation & Maintenance Of State-Of-The-Art 1500 KLD Zero Liquid Discharge (ZLD) System Consisting Of Pre-Treatment, Ultra-Filtration And 2-Stage Reverse Osmosis (RO) Plant At Security Paper Mill (SPM), Hoshangabad On Turnkey Basis.	03 Nos.	Rs. 70,80,000/- Or USD 111200

i Required Terms of completion of work : Within 16 Months From the date of issue of Purchase Order. **For Indigenous Bidder**

Within 08 Months From the date of Confirmed LC. **For Foreign Bidder**

ii Time of Completion :
Installation of Phase – I = 08 Months
Trial of Phase I = 01 Month
Installation of Phase-II = 03 Months
Trial of Phase II = 01 Month
Installation of Phase –III = 03 Months

iii Destination/place of Work/Service : Security Paper Mill, Hoshangabad

iv Delivery Terms :
1. SPM, Hoshangabad, duly unloading. (For Indigenous Bidder)
2. FOB/CIF Mumbai Sea Port (For Foreign Bidder.)

v Required preferred mode of Transportation : By Road. Transport the contracted material / supplies only through Registered Common Carriers.

(Section-VII)

TECHNICAL SPECIFICATIONS

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1. INTRODUCTION

Security Paper Mill (SPM), Hoshangabad is a unit of Security Printing & Minting Corporation of India (SPMCIL) engaged in manufacturing of security and banknote paper. This mill was established in 1968 by Government of India and later on corporatized in 2006 along with other 8 sister units under the aegis of SPMCIL, which is wholly owned by Govt. of India. Like any other paper industry, SPM is also engaged in continuous process system. But unlike other conventional paper mills, S.P.M. has a unique distinction of being the only one of its kind. Security Paper Mill is an environment conscious organization and takes appropriate steps from time to time to protect the environment for sustainable development of the organization. The Unit is having full-fledged effluent treatment plants of 13500 KLD since its inception to treat the effluent generated in manufacturing process.

The capacity of SPM has been enhanced by installing a new line of paper manufacturing in 2015. At the same time, a new state-of-the-art ETP has been incorporated to treat the effluent generated from the new line (PM#5). SPM places great importance on its environment and play significant role in the protection and long-term sustainability of the nature.

The main aim of SPM is to minimize the environmental impact of its production process and to achieve continual improvement in environmental performance. SPM consistently focused to reduce the amount of waste produced and resources used in manufacturing process. However, with the rising concern over environmental pollution practices and stringent pollution norms stipulated by the various pollution controlling authorities viz. CPCB/SPCB/NGT, it has become mandatory for SPM to achieve the Zero Liquid Discharge (ZLD) conditions by recycling and reusing the treated effluent water.

Presently SPM has about 4500 KLD treated effluent as excess quantity to make it usable in pulp and paper manufacturing by filtering through 3 identical units of 1500 KLD, each having 2-stage Reverse Osmosis plant including pre-filtration and Ultra filtration system in phased manner one after another subjected to successful trial run.

2. SITE

i. Location

- Nearest Airport : Raja Bhoj Airport, Bhopal
- Nearest Railhead : Hoshangabad
- Nearest Sea Port : Mumbai

ii. Altitude: 302 Meters above MSL

iii. Latitude: $22^{0}43'10''$ N

iv. Longitude: $72^{\circ}42'30''$ N

v. Ambient Air Temp.

- Maximum : 46.3°C
- Minimum : 3.3°C
- Average : 32.8°C

vi. Mean Dry Bulb Temp. : 30.9°C

vii. Mean Wet Bulb Temp. : 21.2°C

viii. Relative Humidity

- Maximum : 91 %
- Minimum : 19%

ix. Rainfall

- Annual average: 1225.9 mm
- Annual Maximum : 2045.7 mm

x. Wind Velocity

- Mean : 0.8 m/sec
- Maximum : 2.1 m/sec

xi. Earthquake zone: Seismic Zone III

Adequate space is available at plant site for storing and safe keeping of items. However, temporary shed, at the discretion of the contractor, may have to be made to have project office of the contractor and the shed needs to be demolished/dismantled after completion of the job.

3. BACKGROUND

Presently, SPM draws around 9000 KLD fresh water from the Narmada River, which is treated in WTP (capacity 11245 KLD or 2.5 MGD), and used in pulp & paper manufacturing and other utilities. The effluent generation from pulp & paper mill is around 6000 KLD, which is treated in 3-stage effluent treatment plants. Approx. 1500-2000 KLD treated effluent out of 6000 KLD water is recycled and reused in gardening and horticulture purpose through a separate pipeline network, and rest of the treated effluent i.e. about 4000-4500 KLD is being discharged to natural Nallah with prescribed norms. Now, as per the directives of pollution control boards, for achieving the ZLD conditions, SPM has to install a suitable treatment system comprising Pre-treatment, Ultra-filtration and 2-stage Reverse Osmosis (RO) plant to treat, recycle and reuse the treated water in the pulp & papermaking process.

4. OBJECTIVE

i. To meet the concept of ZLD conditions by installation of pre-treatment, ultra-filtration and 2-stage Reverse Osmosis units (3 × 1500 KLD) for further treatment of existing treated effluent for re-utilization within the premises for pulp & paper manufacturing, gardening, plantation and thereby stoppage of discharge out of premises as well as minimizing the fresh water intake from the River.

ii. To ensure no water discharge out of the premises and also bring down the intake of fresh water from Narmada River.

iii. To ensure the statutory compliance of MPPCB/CPCB guidelines for ZLD.

iv. To ensure the statutory compliance of the charter of pulp and paper industry issued by CPCB in the year 2015.

5. SCOPE OF WORK

5.1 The broad scope of work of the successful bidder includes design, supply, construction, installation, commissioning, trial run, final acceptance test and operation & maintenance of state-of-the-art Zero Liquid Discharge (ZLD) system by treating the output of our existing effluent

treatment plants to make it usable in pulp and paper manufacturing and gardening (reject water only) by 3 units of 1500 KLD each consisting of pre-treatment, ultra-filtration and 2-stage Reverse Osmosis (RO) plant as specified in this tender on turnkey basis.

5.2 All the civil construction of pre-fabrication (Prefab) including furniture & fixtures and all the electrical, mechanical, instrumentation works as mentioned in this tender document shall be in the scope of the successful bidder as a part of installation & commissioning of the ZLD system.

5.3 The battery limit of the firm shall start from collection of treated effluent from the outlet of existing filtration plant/ underground tank (as shown in Figure-1) by laying suitable pumps, pipelines etc.

5.4 Successful bidder shall also construct following tanks

i) Main incoming tank for inlet to pre-treatment= 250 m^3

ii) UF feed storage tank = 800 m^3

iii) Intermediate storage tank = 250 m^3

iv) UF treated water tank = 450 m^3

v) Degasser feed water tank= 250 m^3

vi) Reject water tank= 100 m^3

5.5 In addition to above, the successful bidder shall have to construct and set-up a full-fledged water analysis laboratory and provide instruments, apparatus, glassware, and analytical reagents/chemicals exclusively for the said laboratory as mentioned in this tender document.

5.6 Reject water, drain, backwash, sludge water, Clean-in-process (CIP) drain water pumping arrangement with transfer pipeline of non-corrosive material shall be laid by the bidder at the inlet of existing ETP.

5.7 The bidder is also required to undertake comprehensive operation & maintenance including repairs with deputation of manpower services, spares of the proposed ZLD system phase-wise for a period of 1 year during the warranty period from the date of acceptance by SPM.

5.8 The ZLD system will have the following distinct sections as detailed below for one unit of 1500 KLD. The other two units shall also have the similar features. All the three units shall be installed in the phased manner one after another after successful completion of trial run for a period of thirty (30) days. However, the buildings, storage tanks, control rooms, MCC rooms and other utilities etc. may be common among the three units and shall be completed in Phase-1.

5.9 Operation and maintenance including repairs (deployment of minimum manpower as given below) for One year during the warranty period to ensure smooth running of the plant for achieving the RO permeate and reject water quality as specified in Table-1, Table-2 & Table-3.

I. Plant In charge – 1 Person (common for all 3 phases)

II. Shift Supervisors – 3 Persons (1 Person per shift, common for all 3 phases)

III. Skilled Technicians – 9 Persons (3 Technicians per shift per phase)

IV. Semi-skilled Workers – 3 Persons (1 person per shift per phase)

5.10 The system shall be under a warranty for a period of 1 year from the date of acceptance. The firm has to supply the spare parts and replace/repair the defective equipment during the warranty period.

5.11 The runnability of the plant should be minimum 20 hours per day for 365 days in a year. Any failure of the plant and machinery should be restored within 3 days. In case the firm fails to restore the operation of the plant within 3 days, a penalty of 3% per day of monthly operation & maintenance cost shall be levied on the firm.

5.12 The firm has to maintain sufficient stock of required spare parts on site for ensuring uninterrupted operation of the plant. The firm may, however, take back the unused spares after

completion of the O&M period. The firm has to maintain the stock inventory register for verification by SPM.

6. CAPACITY AND PHASES OF THE PROJECT

As detailed above, the tender is floated for 3 Nos. of 1500 KLD ZLD system consisting of Pre-treatment, Ultra filter and RO plant. The whole project is divided in three phases as given below. The 1st phase of the project is consisting of some common facilities/ utilities for all three phases. The bidders need to quote their prices in the price schedule suitably.

6.1 PHASE-I

a) Design, supply and construction of entire civil works as shown in Figure-7a & Figure-7b and as given in Sub-section 8 (Civil works) of Section-VII of this tender document.

b) Design and construction of all RCC tanks as shown in Figure-7a & Figure-7b including two feeding pumps (1W + 1S) and provision of suction port for the subsequent RO units for Phase-2 and Phase-3.

c) Supply of all the furniture and fixtures as mentioned below required for completion of the Phase-1.

Sl. No.	Item	Preferred Make	Qty. (Nos.)
i.	Air-conditioners (Energy efficient, Split-type, 2.0 T, 5-star rating)	Blue Star/ Voltas / Hitachi / Samsung / LG.	6
ii.	Computer table	Godrej, Model-C11 or equivalent	6
iii.	Office chair	Godrej, Model-PCH 7001 or equivalent	6
iv.	Operator's chair	Godrej, Model- PCH 7002D or equivalent	6
v.	Meeting room's chair	Godrej, Model-PCH 7002D or equivalent	12
vi.	Office table	Godrej, Model- work or equivalent	4
vii.	Meeting room's table	Godrej, Model- senate, 9(4+4+1) seater	1

d) Supply, installation and commissioning of electrical items, laying of cables, lighting, power distribution boards as per the Sub-section 10 (Electrical works) of Section-VII of this tender as a common facility for all three phases.

e) Supply, installation and commissioning of suitable compressed air system and blowers (if required) as per the requirement of the project.

f) Supply, installation & commissioning of control room equipment as shown in Sub-section 11 (Instrumentation and Control System) of Section-VII of this tender.

g) Supply, installation & commissioning of 1500 KLD RO plant consisting of Pre-treatment, UF with 2-stage RO units as shown in Sub-section 7 (Requirement of treatment systems for achieving ZLD conditions) of Section-VII of this tender.

h) RO Stage-2 reject with TDS of less than 2100 mg/L shall be sent to existing underground tank (UGT-2) from the reject storage tank as shown in Figure-6.

i) Supply & plantation of 200 nos. of coconut plants along the perimeter wall inside the SPM boundary (approx. 2 KM).

j) Supply & plantation of 1000 nos. of trees along with land preparation and watering system in SPM premises inside/outside the plant.

k) Supply and installation of suitable pumping, pipeline for drip irrigation facility for the coconuts plants.

l) Other equipment, accessories etc. which are necessary for completion of the Phase-1 and not mentioned in the tender shall also be in the scope of the successful bidder.

m) Continuous 30 days' successful trial run of the plant for final acceptance of Phase-1.

n) Operation and maintenance including repairs (deployment of minimum manpower as mentioned at Clause 5.9 of Section 5, Scope of work) for One year during the warranty period to ensure smooth running of the plant for achieving the RO permeate and reject water quality as specified in Table-1, Table-2 & Table-3.

o) The system shall be under a warranty for a period of 1 year from the date of acceptance. The firm has to supply the spare parts and replace/repair the defective equipment during the warranty period.

6.2 PHASE-2

a) Supply, installation & commissioning of 1500 KLD RO plant consisting of Pre-treatment, UF with 2-stage RO units as shown in Sub-section 7 (Requirement of treatment systems for achieving ZLD conditions) of Section-VII of this tender, subject to successful and satisfactory performance of the Phase-1.

b) RO Stage-2 reject with TDS of less than 2100 mg/L shall be sent to existing underground tank (UGT-2) from the reject storage tank as shown in Figure-6.

c) One feeding pump at required stages with suitable automatic changeover arrangement (to divert the flow of water from any pump to any input) to use the standby pump given in Phase-1 as common for both the phases (Phase-1 and Phase-2).

d) Supply and installation & commissioning of required instruments, equipment, valves, feeding pumps (working only, no standby) etc.

e) Supply & plantation of 1000 nos. of trees along with land preparation and watering system in SPM premises inside/outside the plant.

f) Other equipment, accessories, etc. which are necessary for completion of the Phase-2 and not mentioned in the tender shall also be in the scope of the successful bidder.

g) The system shall be under a warranty for a period of 1 year from the date of acceptance. The firm has to supply the spare parts and replace/repair the defective equipment during the warranty period.

h) Continuous 30 days' successful trial run of the plant for final acceptance of Phase-2.

i) Operation and maintenance including repairs (deployment of minimum manpower as mentioned at Clause 5.9 of Section 5, Scope of work) for One year during the warranty period to ensure smooth running of the plant for achieving the RO permeate and reject water quality as specified in Table-1, Table-2 & Table-3.

6.3 PHASE-3

a) Supply, installation & commissioning of 1500 KLD RO plant consisting of Pre-treatment, UF with 2-stage RO units as shown in Sub-section 7 (Requirement of treatment systems for achieving ZLD conditions) of Section-VII of this tender, subject to successful and satisfactory performance of the Phase-1 & Phase-2 and based on completion of phase 1 & 2, The requirement of phase-3 will be evaluated by SPM and if required phase-3 will be executed as under.

b) RO Stage-2 reject with TDS of less than 2100 mg/L will be sent to existing underground tank (UGT-2) from the reject storage tank as shown in Figure-6.

c) One feeding pump at required stages with suitable automatic changeover arrangement (to divert the flow of water from any pump to any input) to use the standby pump given in Phase-1 as common for all the phases (Phase-1, Phase-2 and Phase-3).

d) Supply and installation & commissioning of required instruments, equipment, valves, feeding pumps (working only, no standby) etc.

e) Supply & plantation of 1000 nos. of trees along with land preparation and watering system in SPM premises inside/outside the plant.

f) Other equipment, accessories, etc. which are necessary for completion of the Phase-3 and not mentioned in the tender shall also be in the scope of the successful bidder.

g) The system shall be under a warranty for a period of 1 year from the date of acceptance. The firm has to supply the spare parts and replace/repair the defective equipment during the warranty period.

h) Continuous 30 days' successful trial run of the plant for final acceptance of Phase-3.

i) Operation and maintenance including repairs (deployment of minimum manpower as mentioned at Clause 5.9 of Section 5, Scope of work) for One year during the warranty period to ensure smooth running of the plant for achieving the RO permeate and reject water quality as specified in Table-1, Table-2 & Table-3.

Note:

- *The schematic diagrams (Figures 1 to 7b) given in the tender are indicative only. The interested bidder may visit the site for better understanding of the requirement before submission of the tender.*
- *Depending on the final layout, the location of storage tanks, buildings etc. may vary as per the process flow.*

7. REQUIREMENT OF TREATMENT SYSTEMS FOR ACHIEVING ZLD CONDITIONS

The requirement of treatment systems for achieving ZLD conditions shall be as given below:

I. PRE-TREATMENT

(A) A suitable state-of-the-art pre-treatment system having energy efficient technology shall be designed, installed & commissioned which should be capable to filter the treated effluent coming from SPM's existing ETPs as shown in the schematic diagram (Figure-1). SPM is presently having three conventional treatment plants as below:

(i) Effluent treatment plant of 13500 KLD capacity for effluent coming from paper stream of old plant and some portion from New Paper line (PM#5): Figure 2.

(ii) Pre-treatment plant for effluent coming from pulp plant: Figure-3.

(iii) Effluent treatment plant of 3500 KLD capacity for effluent coming from paper stream of New Paper line (PM#5): Figure-4.

Note: As shown in the schematic diagrams, presently SPM is having conventional aeration system, thickeners, secondary clarifiers, and tertiary filters as PSF & ACF. Thus, similar filtration systems for the proposed pre-treatment shall not be preferred.

(B) The tertiary filtered water (outlet of SPM's existing ETPs) shall be fed to the proposed pre-treatment, and the pre-treatment system should fulfil the below-mentioned purposes.

(i) Effectively remove suspended solids, microfibers, iron and/or any other impurities & colour from the inlet water having characteristics mentioned in Table-1.

(ii) Reduce BOD, COD, phosphorus, sulphate, chlorides and hardness from the inlet water as per Table-1.

(iii) Ensure the quality parameters of the outlet water after pre-treatment system is suitable for UF process as mentioned in Table-1.

Table-1: Quality of water before and after pre-treatment system

PARAMETER	VALUE	
	Inlet water to Pre-treatment	**Outlet water after Pre-treatment**
pH	6.5 – 8.5	6.5 – 8.0
Suspended Solids	Less than 200 mg/L	Less than 5 mg/L
BOD 5 days 20 Deg C.	Less than 100 mg/L	Less than 20 mg/L
COD	Less than 400 mg/L	Less than 100 mg/L
Colour	Less than 100 Pt-Co	Less than 90 Pt-Co
Total Hardness	Less than 200 mg/L	Less than 200 mg/L
Silica	Less than 10 mg/L	5-10 mg/L
TDS	Less than 600 mg/L	Less than 600 mg/L
Temperature	20-40°C (approx.)	20-40°C(approx.)
Iron	Less than 0.05 mg/L	Less than 0.01 mg/L
Oil & Grease	Less than 0.1 mg/L	B.D.L.
Turbidity	Less than 100 NTU	Less than 10 NTU

II. ULTRA-FILTRATION (UF) UNIT- PRE TREATMENT FOR RO PLANT

(A) The objective/purpose of ultra-filtration (UF) is to make treated effluent (coming from pre-treatment) suitable to feed to the RO module section by removing suspended and colloidal impurities and thus providing a consistent treated effluent quality for feeding to reverse osmosis (RO) system.
The treatment scheme of UF module shall be as under.

Pre-treatment – **UF feed pump** – **Basket filter** – **UF module** – **UF backwashing pump** – **UF-CEB & UF-CIP** – **UF Filtrate storage tank** (for feeding to RO module).

The UF module should include all the necessary ancillary system/equipment e.g. feed tanks, UF feed pump, basket filter, high pressure pumps, UF membranes, chemical dosing pumps, ,as well as air scouring, fast flush, back flush, CEB (chemical enhanced backwash) & CIP(clean-in-place) systems, interconnecting pipelines, valves and automation control panel, PLC, SCADA, touch screen along with standby arrangement (wherever necessary), and should be completed with civil works, pipelines, electrical, mechanical and instrumentation as per the project requirement.

(B) The requirements of UF are as under-

i) The UF unit should be capable of handling treated effluent (coming from pre-treatment) of quantity sufficient to produce net output of 1500 KLD of water with a net overall system recovery of not less than 90% considering 20 hours/day operation.

ii) The quality of feed water at inlet to UF will be same as given in Table-1.

iii) The UF module shall consist of suitable chemical dosing systems for the adjustment of CIP, chemical induced backwashing, disinfection etc.

iv) It shall have high capacity basket filters to ensure removal of particulate matter which could damage the or foul the UF membranes.

v) The system should have suitably designed best quality feed water pumps, back wash arrangement and etc. along with standby arrangement (wherever necessary).

vi) The output of UF shall go to permeate tank for feeding to RO system.

vii) The plant shall be completely automatic, pre-assembled on AISI 316L stainless steel skid and it shall be controlled by PLC unit with SCADA system equipped with human manual interface (HMI).

viii) The outlet water quality should conform to the characteristics mentioned in Table-3.

(C) Technical Specifications for ULTRAFILTRATION module

(i) <u>Basket filter</u>	
Type of equipment	AISI 316 manual filter
Type of filtration element	AISI 316 basket
Filtration degree	125 micron
Filtration battery should be equipped with-	a) Inlet and outlet pressure gauge b) Bottom drain valve manual c) Manual air vent d) Automatic cleaning system
Make of Cartridge	Painter/Paul/Millipore
(ii) <u>UF Feed pump</u>	
Type	Centrifugal
MOC of pump casing	AISI 316
MOC of impeller	ASTM CF8M (AISI 316 Cast)
MOC of shaft	AISI 316
Insulation	Class F
Mechanical seal	SiC/SiC
Make	Grundfos/Sulzer/KSB/Wilo/CNP.
(iii) <u>UF Module</u>	
Membrane material	PES/PVDF with single potting preferable free fiber movement type
Membrane type	Hollow fiber
Pore size	As per vendor's selection
Nominal MWCO	100,000 (100 kDa)
Mode of operation	PLC-based auto backwash/fast flush with time setting
Filtration direction	Out-to-In (i.e. Outside-in)
Housing	U-PVC / as per standard
End cap	U-PVC / as per standard
End cap coupling	SS (sealing EPDM)/ as per standard
Make	DOW/KOCH/Aquabrane/GE
UF Skid MOC	AISI316
Inspection & testing clause	i) Review of original manufacturer's certificate ii) Visual inspection
Warranty clause	The supplier will be solely responsible for replacement of membrane elements free of cost at our plant site, if found effective/ or fail to show performance during the guarantee period of 12 months from the date of handing over of the plant. Allowable downtime for replacing the membrane elements should not exceed 3 days from the date of breakdown. This warranty clause is valid subject to operation of the UF modules as per the design basis of this document.
Storage of membrane element prior to installation	Storage of membrane elements prior to installation at plant site is the responsibility of the supplier.

(iv) <u>UF Backwashing pump</u> Type MOC of pump casing MOC of impeller MOC of shaft Insulation Mechanical seal Make	 Centrifugal AISI 316 ASTM CF8M (AISI 316 Cast) AISI 316 Class F SiC/SiC Grundfos/Sulzer/KSB.
(v) <u>UF Cleaning system</u> The UF membrane cleaning system should include both chemical enhanced backwash (UF-CEB) and cleaning-in-place (UF-CIP) systems.	**<u>UF-CEB</u>** UF-CEB system should be completed with necessary tank(/s) & pump(/s) for dosing of alkali, acid, hypochlorite, anti-scalant, Sodium Meta Bisulfite (SMBS)and any other ancillary equipment and/or chemicals etc .with metering/plunger type dosing pumps. **<u>UF-CIP</u>** UF-CIP unit should include cleaning chemical tank(/s) and pump(/s) along with all necessary fittings and arrangements, and should be located in a single skid for the recirculation of the cleaning solution through the cleaning loop and by a tank for the preparation, storage and recirculation of the cleaning solution.
(vi) Material of piping	AISI 316 / U-PVC (Astral/Finolex)
(vii) Flow distributor/Permeate Collection Tube	PP/Nylon Braided
(viii) Life of membrane	3 years minimum
(ix) Life of machinery	10 years minimum
(x) Daily working time	20 h/day minimum
(xi) pH	5-8
(xii) Temperature	40°C max

(D) Table-2: Quality of treated effluent before and after UF module

PARAMETER	**VALUE**	
	Inlet water to UF module	**Outlet water after UF module**
pH	6.5 – 8.0	6.5 – 8.0
Suspended Solids	Less than 5 mg/L	Less than 1 mg/L
BOD 5 days 20 Deg C.	Less than 20 mg/L	5-10 mg/L
COD	Less than 100 mg/L	20-50 mg/L
Colour	Less than 90 Pt-Co	Less than 80 Pt. Co
Total Hardness	Less than 200 mg/L	Less than 200 mg/L
Silica	5-10 mg/L	Nil
TDS	Less than 600 mg/L	Less than 600 mg/L
Temperature	20-40°C(approx.)	20-40°C(approx.)
Iron	Less than 0.01 mg/L	Less than 0.01 mg/L
Oil & Grease	B.D.L.	B.D.L.
Turbidity	Less than 10 NTU	Less than 1 NTU
SDI_{15}	------	Less than 3

III. 2-STAGE REVERSE OSMOSIS (RO) SYSTEM

(A) The RO system shall work in two stages (connected in series and capable of treating 1500 KLD of UF-treated effluent in total). The treatment scheme of RO module shall be as under.

Reverse Osmosis Stage-1 (RO-1) feed pump – Chemical dosing system for pH control, anti-scalant addition, biocide addition, Sodium Meta Bi-sulphite (SMBS) addition etc – Cartridge filters – Desalinization with **RO-1 membrane**–**Pressurization system through booster pump**–**Reverse Osmosis Stage-2 (RO-2)membrane**–permeate cum degasser feed tank (RO-1 & RO-2) – degasser feed pump- degasser unit.

(B) The features of the RO system shall conform to the following.

(i) Reverse Osmosis Stage-1 (RO-1)

The RO-1 shall be capable to treat 1500 KLD of UF-treated effluent. The average operating cycle shall be 20 hours/day, and the RO plant shall be able to handle a feed flow rate of 75KL/hour. The RO-1 shall be capable of operating at minimum 70% recovery rate. The RO-1 should include all the necessary ancillary system/equipment e.g. feed tanks, CF feed pump, cartridge filter, RO-1 feed pump, booster/high pressure pumps, RO membranes, chemical dosing pumps, and pressure tubes, cartridge filter, CIP (clean-in-place) system including cartridge filter, interconnecting pipelines, valves and automation control panel, PLC, SCADA, touch screen along with standby arrangement (for all rotating equipment, 1W+1S), and should be completed with pipelines, electrical, mechanical and instrumentation as per the project requirement.

(ii) Reverse Osmosis Stage-2 (RO-2)

This RO-2 stage is to be suitably designed to treat the reject stream of RO-1, the average operating cycle of the plant shall be 20 hours/day. The RO-2 shall be capable of operating at minimum 50% recovery rate. The RO-2 should include all the necessary ancillary system/equipment e.g. feed tanks, RO-2-booster/high pressure pumps, RO membranes, chemical dosing pumps, and pressure tubes, CIP (clean-in-place) system including cartridge filter, interconnecting pipelines, valves and automation control panel, PLC, SCADA, touch screen along with standby arrangement (for all rotating equipment, 1W+1S), and should be completed with, pipelines, electrical, mechanical and instrumentation as per the project requirement.

(C) The overall output of RO shall conform to the following parameters:

Table-3: Quality of feed, permeate and reject water for RO system

PARAMETERS	RO-1 FEED	RO-1 &RO-2 PERMEATE	RO-2 REJECT
TDS	Less than 600 mg/L	0-50 mg/L	2100 mg/L maximum
pH	6.5 – 8.0	6.0–7.0	6.5 -7.5*
COD	20 – 50 mg/L	< 10 mg/L	<150 mg/L
BOD	5 – 10 mg/L	<2 mg/L	<20 mg/L
Iron	< 0.01 mg/L	< 0.01 mg/L	NIL
Silica	B.D.L.	NIL	NIL
Colour	Less than 80 Pt. Co	NIL	67 Pt-Co
Total Hardness	Less than 200 mg/L	Commercially Zero	667 mg/L
Flow	1500 KLD	–	–

- In case the pH is beyond the prescribed range than the bidder shall have to design suitable dosing system to maintain the pH.

(D) Disposal of RO Reject

a) Stage-1 RO reject shall be fed into Stage-2 RO as input. Accordingly, the supplier should take care of design criteria suitably.

b) RO Stage-2 reject with TDS of 2100 mg/L maximum will be sent to existing underground tank. The bidder has to Supply fresh, healthy 200 Nos. of coconut plants of minimum 5 to 6 ft. height in poly bag and to be planted along the perimeter wall inside the SPM boundary (approx. 2 KM) with suitable pumping, pipelines and drip irrigation facility.

c) Development of approx. 2 meter wide belt of land along the perimeter wall as a site preparation for plantation of coconut trees shall be in the scope of bidder.

d) The maintenance for development and growth of these trees will also be a part of operation and maintenance for a period of 3 years including 1 year warranty period.

Note: *The excess reject water left after drip irrigation shall be feed to the existing pond and shall be in the scope of SPM.*

(E) Technical Specifications for REVERSE OSMOSIS module

(xiii) <u>RO Feed pump</u>	
Type	Centrifugal
MOC of pump casing	AISI 316
MOC of impeller	ASTM CF8M (AISI 316 Cast)
MOC of shaft	AISI 316
Mechanical seal	SiC/SiC
Make	Grundfos/KSB/Sulzer/Wilo/CNP
(xiv) <u>Cartridge filter</u>	
Material	AISI 316L
Type of cartridge	PP, Melt blow
Filtration degree	5 micron
Filtration battery should be equipped with-	a) Inlet and outlet pressure gauge b) Bottom drain valve c) Air vent
Make of Cartridge	Painter/Paul/Millipore
(xv) <u>Pressurization system</u>	
<u>1st Stage high pressure pump-</u>	
MOC of pump casing	ASTM CF8M (AISI 316 Cast)
MOC of impeller	AISI 316L
MOC of shaft	AISI 316L
Mechanical seal	SiC/SiC
Make	Grundfos/KSB/Sulzer/Wilo/CNP
<u>2nd Stage high pressure pump-</u>	
MOC of pump casing	ASTM CF8M (AISI 316 Cast)
MOC of impeller	AISI 316L
MOC of shaft	AISI 316L
Mechanical seal	SiC/SiC
Make	Grundfos/KSB/Sulzer/Wilo/CNP

(xvi) RO Cleaning system The RO membrane cleaning system should include cleaning-in-place (RO-CIP) systems. These cleaning systems shall be placed before/after RO-1 and/or RO-2 and/or in between RO-1 & RO-2, as per the requirement.	**RO-CIP** RO-CIP unit should include cleaning solution tank(/s) and pump(/s) and/or cartridge filter alongwith all necessary fittings and arrangements, and should be located in a single skid for the recirculation of the cleaning solution through the cleaning loop and by a tank for the preparation, storage and recirculation of the cleaning solution.
(xvii) RO Module	
Membrane	Spiral-wound thin film composite with 34 mil feed spacer high rejection brackish water & organic fouling resistant membrane of DOW/KOCH/Toray-CSM make preferable.
Size of element	8" × 40"
Flux	Less than 17 LMH
Surface area of each membrane	400 sq ft Minimum
Filtration direction	Out-to-In (i.e. Outside-in)
Salt rejection	99.5%
Recovery	Minimum 70% in 1st Stage (RO-1) Minimum 50% in 2nd Stage (RO-2)
Membrane pressure vessels	The membranes are housed in filament wound, Pressure vessels of FRP minimum 300 psi.
pH	2.0-11.0
cleaning pH range	1.0-11.5
Temperature	20-45 °C
SDI_{15}	Less than 3
Online monitoring & control	The RO line shall be equipped with online monitoring & control for all the parameters as shown in Table-3, and as per the sensor arrangement shown in Figure-5.
RO Skid	AISI 316 SS skid shall be provided with the pre-assembled reverse osmosis unit including vessel, pipe work, instrumentation, electric connections etc.
Inspection & testing clause	i) Review of original manufacturer's certificate ii) Visual inspection
Warranty claus	The supplier shall be solely responsible for replacement of membrane elements free of cost at our plant site, if found effective/ or fail to show performance during the warranty period of 12 months from the date of final acceptance of the respective phase. The time for replacing the membrane elements should not exceed 3 days from the date of breakdown.
Storage of membrane element prior to installation	Storage of membrane elements prior to installation at plant site is the responsibility of the supplier.
High pressure pipework material	AISI 316.
High pressure line control valves	AISI 316.
Low pressure line material	U-PVC

(xviii) Degasser tower feed pump	
Type	Centrifugal
MOC of pump casing	AISI 316
MOC of impeller	ASTM CF8M
MOC of shaft	AISI 316
Insulation	Class F
Mechanical seal	SiC/SiC
Make	Grundfos/KSB/Sulzer/WILO/CNP
(xix) Degasser air blower & degasser tower	As per bidder's design

(F) UF & RO MEMBRANE CLEANING SYSTEM

1) The firm is required to provide a detailed guideline on cleaning of UF & RO membranes e.g. frequency of cleaning, period of cleaning, formulation of cleaning solution, preparation methodology and application of cleaning solution etc.
2) All the necessary tank(/s), dosing pump(/s), motors(/s), piping(/s) and also the cleaning solution(/s) etc required for cleaning of UF & RO membranes shall be provided by the firm.
3) The firm has to provide the formulation of the cleaning solution, and proprietary cleaning chemical/solution shall not be accepted.
4) The cleaning system for UF membranes should be completed with fast flush, backflush, CEB, CIP; and all the required pump(/s), motor(/s), tank(/s) alongwith piping(/s) & tubing(/s), valves(/s) and any other accessories shall be provided by the firm.
5) The cleaning system for RO membranes should be completed with CIP and timer based Solenoid Valve operated and all the required pump(/s), motor(/s), tank(/s) along with piping(/s) & tubing(/s), valves(/s) and any other accessories shall be provided by the firm.

8. CIVIL WORKS

Design & Supply of building material and Construction of earthquake-resistant shed building (prefab) of approx. 2700 m^2 plinth area with a clear height of 6 m. Construction of RCC tanks of approx. 2100 m^3, utility building of approx. 500 m^2 as given in details at the relevant section and schematic diagram (Figure-6, Figure-7a & Figure-7b) of this tender.

The area and volume mentioned above are only for the purpose of evaluation of tender to bring all the bidders at common platform. However, the area and volume may vary in accordance with the design of successful bidder as per requirement of complete systems. Bidder has to quote plinth area rate per sq. meter for shed building and utility building separately; and per cu. meter for storage tanks, as given in the price schedule. However, payment shall be made on actual measurement.

The nature of work shall generally involve preparing of all drawings, excavation, dewatering, shoring, backfilling around complete structure and plinth filling, disposal of surplus spoil, concrete including reinforcement and formwork, brickwork, fabrication and erection of structural/miscellaneous steel inserts, anchor bolt, laying and testing of water pipes, sanitation, drinking water pipelines and points, ventilation, approach roads and drainage items and clearing out of site, dressing and removal of rubbish and garbage etc.

The work to be performed as per the specification consisting labours, supervision, building materials, scaffolding, batching plant, equipment for construction, tools and tackels, transportation, all incidental items (not shown or specified in the tender) but reasonably implied or necessary for successful completion of the work and strictly in accordance with the drawings and specification.

The successful bidder should submit all drawings before construction of shed building, tanks and utility building for approval of competent authority of SPM. Subsequently, the bidder shall obtain the approval of design & drawing (NOC) from Factory Inspector as per rule 3A under subsection 1 of section 6 of M.P. Factory rule 1962 as per following:

1. Plans in triplicate drawn to scale showing –

(i) The site of factory and immediate surrounding including adjacent building and other structures, road, drain etc. drawn to a scale not less than 1cm equal to 500 cm.

(ii) The plan, elevation and necessary cross sectional elevation of the various building and structures including all relevant details relating to natural lighting, ventilation and means of escape in case of emergency. The plans shall also clearly indicate the lay-out of the plant and machinery, position of airless and passage-ways, the latrines and urinals and other sanitary provisions and shall be drawn to a scale not less than 1 cm equal to 100 cms.

(iii) Materials to be used for construction of building and roofing.

The successful bidder shall maintain complete official records like material brought at site register, site order book, test register, hindrance register etc. and hand over to SPM after completion of the work. The bidder shall submit Building stability test certificate as per Factories Act 1948 and MP Factory Rules 1962 at the time of acceptance of civil work.

A. Shed building/Prefab

Design and construction of the shed building with structure, flooring, etc. are to be carried out as per following points 1 to 25 with the help of specifications / CPWD specification 2009 Vol I & II with up to date correction slip and relevant IS code.

Sr. No.	Items	Specifications
1	Soil test/ Pile Test	Vertical load testing of piles in accordance with IS 2911 (Part IV)
2	Design Standard	The design of RCC structure shall be carried out as per code of practice for plain and reinforcement concrete for building construction IS 456 and National building code. The design of steel structure shall be carried out as per IS 800. The design of liquid retaining structure shall be carried out as per IS 3370. All design shall to conform to relevant Indian Standard All structures should be earthquake resistant.
3	Excavation	All excavation work shall be carried out by mechanical equipment unless in opinion of the SPM. The excavation work shall be carried out to be minimum dimensions as required for safety and working facility. Necessary working space as stipulated by the relevant IS code shall be included in the excavation work

4	Foundation	RCC (1:1.5:3) pile foundation with pile cap and plinth beam or as per structural design based on soil investigation
5	Plinth filling	At places backfilling shall be carried out with sand in layer not exceeding 230mm. The sand shall be clean, medium grained and free from impurities.
6	Superstructure	RCC framed structure with brick wall up to 3.5 m height and above the brick wall, steel framed structure shall be constructed conforming to relevant IS standard.
7	Cement	43 Grade Ordinary Portland cement conforming to IS 8112
8	Aggregates	Aggregates shall consist of naturally occurring stone and gravel (crushed or uncrushed) and Sand. They shall be chemically inert, strong, hard, clean, durable against weathering, of limited porosity, free from dust/silt/organic impurities/deleterious material and conform to IS 383.
9	Water	➢ Water used for both mixing and curing shall conform to IS456. Potable water is generally satisfactory. Water containg any excess of acid, alkali, sugar or salt shall not be used ➢ The pH value of water shall not be less than 6.
10	Centering and shuttering including removal of form from all height	The design and engineering of formwork as well as its construction shall be the responsibility of contractor. The formwork may be of lined timber, plywood, laminated plywood, steel depending upon the type of finish specified. The face of formwork coming to contact with concrete shall be cleaned and two coats of approved mould oil applied before fixing reinforcement Contractor shall provide adequate props of adjustable steel pipes carried down to a firm bearing without overloading any of the structures.
Sr. No.	**Items**	**Specifications**
11	Steel reinforcement for R.C.C. work	Thermo-mechanically Treated bars of grade Fe-500D or more for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Reinforcement bars shall conform to IS; 432 and/or IS 1786 and welded wire fabric to IS 1566 All reinforcement shall be clean, free from pitting, oil grease, paint loose mill scales, rust, dirt, dust or any other substance that will destroy or reduce bond.
12	Concrete	Concrete in the works shall be DESIGN MIX CONCRETE OR NOMINAL MIX CONCRETE. All concrete works upto grade M15 can be NOMINAL MIX CONCRETE whereas all other grade, M20 and above, shall be DESIGN MIX CONCRETE. The minimum grade of concrete shall be as per Table 5 of IS 456 for various exposure conditions of concrete. For various environmental conditions, refer Table 3 of IS 456. The minimum cement content for Design Mix Concrete shall be as per Table 5 of IS 456. It shall be CONTRACTOR's sole responsibility to carry out the mix design at his own cost. Curing period : As per IS 456.

13	Masonry	Brick work (1:6) and half brick work (1:4) with non-modular fly ash bricks conforming to IS:12894 class designation 10 avg compressive strength
14	Flooring	i. 62 mm thick cement concrete flooring with concrete hardener topping under layer 50 mm thick cement concrete (1:2:4) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6mm nominal size) by volume hardening compound mixed @ 2 liter per 50 kg of cement or as per manufacture's specifications. ii. Supply, surface preparation, application of heavy-duty, high-performance multi-component 100% solid epoxy flooring of thickness 4.5 mm (2.5 mm thick epoxy underlay + 2 mm thick epoxy self-leveling topping) on the shop floor.
15	Plaster	12 mm cement plaster of mix 1:6 on smooth face of brickwork and 15 mm thick cement plaster of mix 1:6 on rough face of brickwork
16	Rain water pipe	U-PVC rainwater pipe of 110 mm diameter conforming to IS:13592 type A, including jointing with seal ring conforming to IS 5382.
17	Sheet Roofing	Precoated, galvanised iron profile sheet 0.50 mm (+0.05%) total coated thickness with zinc coating of 120 grams per sqm as per IS:277 , in 240 MPa steel grade, 5-7 microns epoxy primer on both side of the sheet and polymer top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length of 12 m or as desired by SPM. The sheet shall be fixed using self-drilling / self-tapping screws of size 5.5 X 55 mm with EPDM seal. These sheets shall be covered on the top and all four sides after 3 meter of brick work. Turbo roof-extractors (without motor) should be installed in sufficient numbers to ensure minimum 15 air changes.
Sr. No.	**Items**	**Specifications**
18	Structural steel work including fabrication & fixing of main gate	Structural steel work riveted, bolted or welded in built up sections, trusses, prefab structure and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer and paint of approved colour all complete. All structural members should conform to applicable IS codes.
19	Door	35 mm thick Factory Made laminated veneer lumber door shutter conforming to IS:14616 & TADS 15:2001 (Part B) including ISI marked MS pressed butt hinges bright finished of required size with necessary screws all complete and paneling with panel of 12 mm thick one side pre-laminated particle board (decorative lamination on both side) grade-1 medium density flat pressed FPT-1 or graded wood particle board FPT-1 conforming to IS:3087, bonded with BWP type synthetic resin adhesive as per IS 848 and pre laminated conforming to IS 12823 grade 1 Type II marked.
20	Windows & Ventilation	Providing and fixing aluminum work for windows and ventilators with extruded built up standard tubular sections/appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/neoprene gasket, etc. Aluminum sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminum snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings as per the standards. Turbo roof-extractors (without motor) should be installed in sufficient numbers to ensure minimum 15 air changes.

20.1	Aluminum Section	1.5 mm thick Powder coated aluminum section (minimum thickness of powder coating 50 micron).
20.2	Glass	Float glass panes of 5.50 mm thickness
20.3	Hardware	Builder's hardware of fittings & fixtures shall be of the best quality from approved manufactures
21	Painting	
21.1	Internal	Distempering with 1st quality acrylic distemper (ready mixed) of approved manufacturer of required shade and colour complete, as per manufacturer's specifications.
21.2	External	Finishing wall with acrylic smooth exterior paint two or more coats applied @1.43 ltr/10 sqm and including primer coat of exterior primer applied @2.20 Kg/ 10 sqm
22	Site development	Bidder should construct RCC approach road and connect to the nearest road, provide suitable arrangement for drain/rain water and drinking water line in the shed building. For disposal of human waste and waste water, suitable drainage system (either connecting with the existing septic tank or construction of new septic tank), suitable water supply line from nearest water pipe line has to be constructed and installed by the successful bidder.
23	Plinth protection	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, leveling & dressing & finishing the top smooth.
Sr. No.	**Items**	**Specifications**
24	Anti-termite treatment	Supplying, diluting and injecting CHLORPYRIPHOS/LINDANE emulsion for post constructional anti-termite treatment of soil, floor and external wall as per direction of SPM on each stage.
25	Miscellaneous	Fabrication of lifeline on roof, handrail, pipe supports, staircases, supports etc. as per finalized drawing are to be designed and constructed by the firm.

B. Liquid retaining structure (storage tanks)

Design and construction of all required liquid retaining structures (collection and storage tanks) of the capacity given below and as per the schematic diagram (Figure-6, Figure-7a and Figure-7b) of RCC in rectangular shape resting on the ground with top RCC slab and flexible base for storing of treated effluent with 200 mm freeboard using M-30 grade concrete and Fe 500D or more. Permissible stress should comply with the values recommended in IS 3370 and IS 456:2000 codes.

i) Main incoming tank for inlet to pre-treatment= 250 m^3

ii) UF feed storage tank = 800 m^3

iii) Intermediate storage tank = 250 m^3

iv) UF treated water tank = 450 m^3

v) Degasser feed water tank= 250 m^3

vi) Reject water tank= 100 m^3

Note: The quantity and capacity of the storage tanks may vary as per the final design of the successful bidder on the basis of the process requirement to avoid any constraint/inconvenience in the smooth & efficient operation of the plant.

These tanks shall be constructed in RCC with complete piping & allied equipment by the successful bidder as per the treatment scheme. The successful bidder shall submit the design detail with structural drawings and GA drawings, etc. to obtain the prior approval from SPM before starting civil works in this respect. Inner walls of all the tanks shall be epoxy-coated. All the storage tanks shall be covered with RCC roofing on the top with the provision of manhole and ladder of non-corrosive material.

The bidder shall take special care for concrete of liquid retaining structures specifically for finishing and water tightness. All such structure shall be hydro-tested. The bidder shall include the price for hydro-testing of structure, all arrangements for testing such as temporary bulk heads, pressure gauges, pumps, pipe line etc. The bidder has to make the provision for having the suction port for the all three units of RO plant.

Any leakage that may occur during the hydro-test or subsequently during the defect liability period or the period for which the structure is guaranteed shall be effectively stopped either by cement/epoxy pressure grouting, guniting or such method as may be approved by SPM. All such rectifications shall be done by bidder to the entire satisfaction of SPM at no extra cost.

C. Utility Buildings

Design & construction of utility building with a height of 3.5 m above plinth level for construction of store, MCC room, toilets, control room, meeting room, office, water analysis laboratory, tool storage room as shown in the Figure-6, Figure-7a & Figure-7b.

i. **Control Room, MCC room, meeting room, office -** Design and construct with plinth protection as per the Figure-6, Figure-7a & Figure-7b.
   Foundation with Brick work section: The control room & MCC room have to be constructed with RCC structure & foundation and RCC slab as per above point no. 3, 4, 5, 7, 8, 9, 10, 11 and 12 of shed building; and brick work masonry as per above point no. 13 of shed building. Wall plaster with cement mortar to as per point no. 15 of shed building shall be applied on the brick work.

ii. Aluminum Section: Aluminum partitions with extruded built up standard tubular sections/appropriate Z sections and other sections of approved make conforming to IS:733 and IS:1285, fixing with dash fasteners of required diameter and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/neoprene gasket etc. above the brick work. Aluminum sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminum snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete.
   For fixed portion: 1.5 mm thick Polyester powder coated aluminum (minimum thickness of polyester powder coating 50 micron.) size of opening 3 X 1.5 meter.
   For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required all complete with 1.5 mm thick Polyester powder coated aluminum (minimum thickness of polyester powder coating 50 micron).
   Glazing: Glazing with float glass panes of 5.50 mm thickness in aluminum door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete.

iii. Flooring: With vitrified floor tiles in sizes of tile 1200 mm X 1200 mm (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, color and shades on floor (1:4) and skirting (1:3), laid on 20mm thick cement mortar, jointing with grey cement slurry @ 3.3 kg/sqm including grouting the joints with white cement and matching pigments etc., complete.

iv. Doors: As per point no. 19 of shed building.

v. Windows & ventilations: As per point no. 20 of shed building.

vi. Paint/white washing:
External: Finishing wall with acrylic smooth exterior paint two or more coats applied @1.43 ltr/10 sqm and including primer coat of exterior primer applied @2.20 Kg/ 10 sqm.
Internal: Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade.

b. **Water Analysis Laboratory-** Design and construct with plinth protection as per the Figure-6, Figure-7a & Figure-7b.

i. Laboratory room made with RCC structure and RCC slab with foundation as per above point no. 3 to 12 of shed building

ii. Brick wall masonry as per above point no. 13 of shed building.

iii. Aluminum section as per above point ii (a) of utility building.

iv. Wall plaster with cement mortar as per point no. 15 of shed building.

v. Providing and applying plaster of Paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth with coat of white primer all complete.

vi. Flooring ; Providing and fixing 10 mm thick acid and/or alkali resistant tiles of approved make and colour using acid and/or alkali resisting mortar bedding, and joints filled with acid and/or alkali resisting cement as per IS : 4457, complete. In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand), In dado/skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)

vii. Testing platform with cupboard/shelves and black granite flooring on top and provision of fresh water supply line with sinks.

viii. Doors : As per point no. 19 of shed building

ix. Windows & Ventilations: As per point no. 20 of shed building.

x. Colour/white washing:
External: Finishing wall with acrylic smooth exterior paint two or more coats applied @1.43 ltr/10 sqm and including primer coat of exterior primer applied @2.20 Kg/ 10 sqm.
Internal: Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade.

c. **Store room & Tool storage room -** Design and construct with plinth protection and passage as per the figure-6 &7.

i. Offices room made with RCC structure and RCC slab with foundation as per above point no. 3 to 12 of shed building.

ii. Brick wall masonry as per above point no. 13 of shed building

iii. Wall plaster with cement mortar as per point no. 15 of shed building

iv. Providing and applying plaster of Paris putty of 2 mm thickness over internal plastered surface to prepare the surface even and smooth with coat of white primer all complete.

v. Flooring with vitrified floor tiles in sizes of tile 600 X 600 mm (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades in floor (1:4) and skirting (1:3), laid on 20mm thick cement mortar, jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.

vi. Doors: As per point no. 19 of shed building.

vii. Windows & Ventilations: As per point no. 20 of shed building.

viii. Paint/white washing:
External: Finishing wall with acrylic smooth exterior paint two or more coats applied @1.43 ltr/10 sqm and including primer coat of exterior primer applied @2.20 Kg/ 10 sqm.

Internal: Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade.

ix. Contractor shall provide suitable arrangement for drinking water by installing drinking water pipe line with sink and connect drainage system

d. Toilet blocks - Design and construct with plinth protection as per the drawing shown in Figure-6, Figure-7a & Figure-7b.

i. Toilet room made with RCC structure with foundation as per above point no. 3 to 12 of shed building

ii. Brick wall masonry as per above point no. 13 of shed building

iii. Wall plaster with cement mortar as per point no. 15 of shed building

iv. Windows & ventilations: As per point no. 20 of shed building including suitable exhaust fan.

v. Providing and laying rectified Glazed Ceramic tiles on floor and walls (2.1 meter height) of size not less than 300x450 mm in dado (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in colours White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement: 4 Coarse sand) for floor and 1:3 for wall , jointing with grey cement slurry @ 3.3kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.

vi. Paint/white washing:

External: Finishing wall with acrylic smooth exterior paint two or more coats applied @1.43 ltr/10 sqm and including primer coat of exterior primer applied @2.20 Kg/ 10 sqm.

Internal: Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade.

vii. Providing and fixing water closet squatting pan (Indian type White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required.

viii. Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required.

ix. Providing and fixing wash basin with C.I. brackets, 15 mm PTMT pillar cock, 32 mm PTMT waste coupling of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required. White Vitreous China Flat back wash basin size 550x400 mm with single 15 mm PTMT pillar cock

x. Contractor should provide and fix mirrors with moulded PVC frame, FRP/PVC doors with frame

xi. For disposal of human waste and waste water, suitable drainage system (either connecting with the existing septic tank or construction of new septic tank), suitable water supply line from nearest water pipe line.

9. MECHANICAL WORK

(A) General

i. Selection of mechanical equipment / pipeline / pipe fittings / valves and pipe support / welding etc should conform to applicable latest IS standard/any other relevant standard as per specified makes.

ii. Bidder should submit information regarding design standard adopted, MOC for all the equipment / pipeline / pipe fittings / valves and pipe support etc. along with the Make in the Bill of material (B.O.M).

iii. Plant layout should be maintenance-friendly and provision for proper lifting and handling arrangement of pump, motor and other heavy equipment will be in the scope of supplier.

iv. Specification of material for dosing tank should be mentioned.

(B) Site tests

i. After erection at site, all components, equipment as described in this tender document shall be tested to prove satisfactory performance and/or fulfillment of functional requirements without showing any sign of defect as individual equipment and as well as a system.

ii. All rotating components of the system as applicable shall run at the rated speed for a period of 30 (Thirty) Days. During this period, all the components shall function smoothly without any undue deflection; unbalance vibration, flutter, slipping or sticky motion, excessive play & overheating at bearing parts, sparking etc.

iii. Following tests shall be done in particular.

a. Hydraulic test for all tanks & chests and pipes.

b. Performance test for capacity, head and BHP of pumps and blowers.

c. Tests for checking fault in tile lining and painting.

d. Tests for material composition.

e. All other tests as required for satisfactory performance of the plant and equipment.

f. All test reports/ certificates from the OEM shall be submitted to the SPM.

10. ELECTRICAL WORK

The scope of electrical work shall include supply, erection, testing and commissioning of the following equipment/materials for ZLD System:-

A. Motor Control Center (MCC)

MCC shall have two (2) incomers, each having 100% power capacities so that in case of outage of one incomer full load of the MCC can be maintained through the other. The MCC shall have two bus sections with one bus coupler in between them. Incoming power supply shall be available at (existing industrial substation V (IS-V)) approx. 75 m and from IS-VI/IS-IV which is approximate 150 m. away from RO plant location. Firm has to lay the cables from RO plant to IS-IV/IS-V/IS-VI. Incoming cable entry must be from bottom side of the panels. The MCC shall provide power and control supply to all drive motors/ electrical equipment/ auxiliary panels/lighting systems etc. of the complete plant. A suitable rating of MCCB is to be installed in each incomer of MCC panel. Control wiring inside the panels must be tagged and properly dressed. Multifunction meter shall be installed in each incoming MCC panel. A provision for calculation of energy consumption in control desk/ HMI should be given.

The fault levels of 415 V systems shall be 50 kA for 1 sec. All relevant equipment shall be designed accordingly. In each feeder indication lamp for ON, OFF, TRIP, READY, emergency switch and local /remote operating key must be provided. Power for Control desk, HMI panel, other field instruments, control supply etc. to be fed from online UPS of suitable rating for power back-up of at least 1 hour.

Make for LT switchgears and Panels: Siemens, L&T, ABB.

UPS: APC, Power one, Emerson

B. Cables and Wires

i. All the cables including incoming power cable to MCC panel will be in the scope of bidder.

ii. All control and instrument wiring shall be with stranded copper conductor PVC insulated wire of cross section of 2.5 mm^2. For control and instrumentation circuit and crimping/compression type

lug termination is to be used. The wires shall be identified at both ends using plastic numbering ferrules.

iii. Power Cable: XLPE armored Copper Cable.

iv. Wires: FRLHS copper wires for control wirings and for lighting supply.

v. Make: Polycab, CCI, Finolex, RR Kable, KEI.

C. Earthing

i. G.I. earth mate inside the plant with riser to be installed for proper earthing of electrical equipment /conducting part. In all motors, panels, cable tray and all electrical conducting part double earthing to be provided.

ii. In addition to earth pits, lightening arrester protection for the buildings will be in the bidder's scope of work. Separate earth pits for the lightening arrester shall be provided by the firm.

iii. All connections from bus bars up to fuses/MCCB shall be fully shrouded to minimize the risk of phase-to-phase and phase-to-earth shorts. Equipment grounding using copper flat strip from earth mate to connector and from subsequent equipment.

D. Motors:

Motors must have following specifications:-

i. All motors must be AC induction motors.

ii. AC drives should be used wherever variable speed of motor is required.

iii. To start motor above 10 HP soft starters shall be used if constant speed is required.

iv. Motor should not be patented by OEM.

v. Motor should be IE4, IP55.

vi. All equipment and materials shall be designed, manufactured and tested in accordance with the latest applicable Indian Standards (IS) and IEC.

vii. PVC canopy cover for motor to be provided.

viii. Make:

AC drives: Siemens, ABB, Danfoss.

Soft Starter: Siemens, Danfoss, ABB.

E. Other Requirements / Scope of supply

i. Local Emergency Stop to be mounted in various areas so that in case of any emergency, plant may be shut off.

ii. All structures, steel attachments, embedded components etc. are required for complete electrical work.

iii. A qualified electrical supervisor must be deputed during installation and commissioning.

iv. Devices like monorail/hoist etc. required for handling of electrical equipment e.g., motors etc. shall be provided by the Contractor.

v. All final as built drawings shall be provided in hard and soft copy.

F. <u>Indoor/ Outdoor illumination Work:-</u>

The equipment and materials within the scope of supply under indoor/outdoor illumination shall include but not limited to:

i. Lighting fixtures with LED lamps and accessories.

ii. Lighting panels such as MLDB, PDB and LP etc.

iii. Ceiling fans, Wall mounting fans, exhaust fan receptacles, switches, and switchboards.

iv. Cables, wires, splicing/termination/connection accessories including 4 way/3 way/2 way cable junction boxes with disconnecting devices on Conduit and accessories, junction and pull boxes, terminal blocks.

v. All fittings, supports, brackets, anchors, clamps and connections.

vi. Civil foundation street lighting poles/panels and flood light towers.

vii. Receptacles for special purpose like for welding machine, drill etc.

viii. 2.5 mm sq. flexible copper wire for lighting fixture.

ix. Separate earth pit for street lighting pole.

x. Industrial sockets for Air conditioner etc. at appropriate locations.

To carry out of detail engineering including design calculations, preparation of lighting layouts showing location of fixtures according to lux level mentioned below :-

Table -A

Sr. No.	Area/Structure	Average Illumination Level in Lux.	Type of Fixture / Luminaire
1	Main Control Rooms office space	300	Decorative recessed mounted with mirror optic.
2	plant area	400	Industrial integral high bay Black anodized extruded aluminum housing (Heat sink) for efficient thermal management, sturdiness & excellent corrosion resistance, pressure die cast aluminum housing or equivalent material with heat sink property.
3	Laboratory	300	Decorative recessed mounted with mirror optic.
4	Equipment Room /Switchgear Rooms	200	Industrial type fluorescent lamp with vitreous enamel reflectors.
5	Toilet and wash room	70	Commercial channel mounted box type.
6	Main Roads Street light with solar panel	25	Integral type street Lighting luminaire with aluminum reflector.

The electrical installation shall meet the requirements of Indian Electricity Rules, relevant IS code of Practice for respective equipment and National Electrical code of India.

Emergency A.C. Lighting

Firm has to supply the inverter of the suitable capacity to cater the 10% requirement of total lighting load in case of failure of main Supply with the automatic changeover. Back up time should be 1 Hrs.

Make

i. LED Lighting fixtures – PHILIPS, CROMTON, BAJAJ, WIPRO.
ii. MCCB, MCB – ABB, L&T, LEGRAND, HAVELLS, SCHNEIDER.
iii. Switches & Sockets - HAVELLS, L&T, SIEMENS, CGL
iv. Fans - CGL, BAJAJ, HAVELLS,ORIENT,USHA
v. Distribution Board—LENGARD, SIEMENS,ANCHORE,SCHNIEDER HAVELLS
vi. Inverter :- Luminous, Exide, Su-kam

Other Requirement :-

i. Separate neutral wire shall be provided for each circuit/ lighting fixture. Wiring throughout the installation shall be such that there is no break in the neutral wire in the form of switch or fuse.
ii. Flame proof lighting fixture to mounted in chemical / hazardous areas.
iii. Conduit should be GRC type.
iv. Receptacles of 63 Amp. to be provided inside periphery of the plant.

v. Distance between two consecutive receptacles should be 30 mtrs.
vi. Exhaust fans for control room, laboratories and ceiling fan for MCC room will be in the scope of bidder and no. will be as per requirement .
vii. A flexible copper wire of 2.5 sq. mm. to be used in each LED fixture i.e. high bay light, street light and tube light.

APFC Panel:-

i. Automatic power factor controller to be installed in each incoming MCC panel to maintain power factor near to 0.99.
ii. APFC panel must be of IGBT type.

G. Scope of Services

i. Erection, testing & commissioning of all equipment with all fittings & accessories supplied under this contract.
ii. Erection, testing & commissioning of all motors supplied under this package.
iii. Supply, laying, termination, testing & commissioning of all Power & Control Cables.
iv. Erection, testing & commissioning of PMCC and MCC supplied under this package.
v. Erection, Testing & Commissioning of all local panel/distribution board, junction box etc. supplied under this package.
vi. All other allied works in connection with the above work whether specifically mentioned in the specification or not but necessary to complete the work shall be deemed to be included under the scope of this specification.
vii. All testing equipment as required for testing & commissioning of equipment /system shall be arranged by the bidder.

11. INSTRUMENTATION AND CONTROL SYSTEM

(A) System requirements:

The UF & RO plants have to be designed to operate & monitor through PLC & PC based SCADA from Main Control Room and also, from local push button station/receiver panel. Required instrumentations and controls are to be provided matching safety requirements and functional requirements. Necessary residual C&I system designs are to be carried out by the firm.

Field process instruments for pressure, temperature, flow, level shall be installed at all stages and locations. However, the analytical instruments for conductivity, turbidity, ORP, pH, SS, TDS, BOD, COD, silica etc. for measuring the parameters mentioned in the Table-1, Table-2 & Table-3 are to be mounted centrally as shown in the schematic diagram (Figure-5). The firm has to provide suitable valves, control elements, equipment etc. for automatic sampling with a suitable programming for sequential/desired measurement of the parameters of each stages. Subsequently, receiver panel signals are to be communicated to PC based SCADA through proper cables and other hardware. Besides process parameters, status of all pumps, valves, etc. are also to be made available in PC based SCADA. The firm is also to provide PLC & PC based built-in fully auto backwash provision for UF while timer based flushing for RO modules should be automatic with the provision of manual operation. The PC based SCADA visually depicts the process and incorporates the relevant indication of process parameters and also equipment status indication.

There will be three units of 1500 KLD each comprising Pre-treatment, UF and 2-stage RO. For each unit, there will be a single local control panel (LCP) and all LCPs of three units will be in a network and to be hooked up with one centralized SCADA system. Each LCP shall have remote/local selector switch so that particular equipment could be operated in remote or local mode only when the said selection has been made. The Centralized SCADA system should have industrial grade (IPC) one operating stations and one Engineering cum Operating station with provision for on-line remote support from vendor.

PLC & SCADA system (for auto operation) should be installed inside the control room by the supplier. Supply of power/instrument cables, cable trays and installation of other accessories are in the scope of the supplier. Suitable furniture/panels for installation and housing/keeping of panel PC, personal computers & SCADA system is in the scope of supplier. These are to be designed aesthetically and placed according to the requirement of the control room.

Separate cable trays with covers shall be laid for electrical devices (ladder type) and instrument signals (perforated type) with proper structure. Laying cables and cable trays from instruments (all instrument transmitters etc.), electrical units (motors/motorized valves etc.) to remote I/O panels or PLC panel through local junction box with proper earthing with quality inspections and user stage-wise inspections.

State-of-the-art equipment, systems and accessories shall be supplied from latest proven product range of reputed experienced manufacturer whose successful performance has been established and shall be based on the latest engineering practice and shall not restrict to the following:

i. The operation of the UF & RO is to be performed from the local control panel/Main control station.
ii. PLC based closed loop control, open loop, safety system and data acquisition shall have to be provided by the firm.
iii. PLC shall be complete with all configurations.
iv. Field transmitters shall be of smart type. Transmitters shall communicate with the control system in the form of 2-wire/4-wire analog signal 4 – 20 mA DC. All transmitters should have a local display. For digital signals the typical interrogation voltage shall be 24 Volts D.C.
v. Instrumentation sensing, transmission, measuring and computing system shall be solid state electronic type and the final control device for regulating closed control loops shall have electro pneumatic positioners if required to operate the system.
vi. Motor operations shall be interfaced with the Main/ local Control station.
vii. Alarm trends, events and totalizers shall be displayed in PLC operator stations. System should be capable to store the real time data for at least 3 months. System should be capable enough to provide the print of the alarms, trends, events and totalizers for at least 3 months.
viii. **There should be provision in the system with web-enabled access for reject water parameters (Table-3) that can be directly viewed by any statutory body if it is required.**
ix. Suitable flow meters of reputed make e.g. Krohne/ ABB/ Yokogawa/ Rosemount/ Endress+Hauser/ Honeywell/ Siemens shall be provided at the following stages:
    a. Inlet to pre-treatment
    b. Outlet from pre-treatment
    c. Outlet from Ultrafiltration
    d. Permeate of RO-1
    e. Reject from RO-1 going to RO-2
    f. Permeate from RO-2
    g. Reject from RO-2
x. Control valves if used for regulating service shall be of reputed make.
xi. Adequate local Instruments such as pressure gauge, temperature gauge, level gauge, level switch, pressure switch, temperature switch, flow switch etc. shall be provided.
xii. Dial gauge if installed should be minimum 150 mm.

xiii. All field mounted instruments, enclosures, junction boxes etc. shall be provided with weatherproof and dust-proof enclosures as per IP-65 along with canopies and should be easily accessible.

xiv. For instrument air, S.S. pipe (15/25 NB size) shall be used for air distribution. Individual air supply shall be provided by 6 mm or 8 mm OD Copper Tube through an isolating needle valve and air filter regulator. Copper tubing shall be PVC coated for corrosion resistance.

xv. Perforated Aluminum Trays (minimum 2mm thick) shall be utilized for branch routing of signal cables/tubing.

xvi. All C&I cables (such as screened and compensating cable) shall be of individual shielded type. In general, signal / control / power cables shall be of 0.5 mm^2/1.0 mm^2/ 1.5 mm^2/ 2.5 mm^2 Copper respectively.

xvii. Tagging and ferruling of all electrical connections to be done.

xviii. The control room should be equipped with air-conditioning system .The firm has to suggest the heat load.

xix. Inside PLC panel, all relays, safety module contactors etc. shall operate on 24 V DC only.

xx. Licensed version program software to be provided by the supplier.

(B) Grounding

Separate Protective and Electronic grounding shall have to be provided.

(C) Online Uninterrupted Power Supply: As described in 'Electrical' section.

For all hardware including relays, Man Machine Interface, Peripherals and other C&I systems such as panel instruments, field instruments, requiring 240V AC and other PLC based instruments should be supplied by 240 V online UPS of suitable capacity having at least one hour back-up.

(D) Scope of supply

The scope of supply shall include the following:

i. The PLC and SCADA should be of Siemens/ABB/Allen Bradley/Yokogawa make.

ii. Operator and engineering station consoles shall be of industrial grade computer (IPC), Make: Siemens/Dell/HP.

iii. All Field instruments viz. smart transmitters, process switches, sensors, converters, analyzers etc. along with all accessories of following make: ABB/ Yokogawa/ Rosemount/ Endress+Hauser/ Honeywell/ Siemens.

iv. One laptop with full software back-up in ladder/FBD for troubleshooting.

v. The analytical instruments for conductivity, turbidity, ORP, pH, SS, TDS, BOD, COD, silica etc. for measuring the parameters mentioned in the Tables 1-3 are to be mounted centrally as shown in the schematic diagram (Figure-5). The preferred make of the sensors shall be i::SCAN/WTW.

vi. All primary flow elements along with root valves, flanges, nuts, bolts, gaskets and accessories.

vii. All control valves/dampers along with actuators, positioners, position transmitter, limit switches, hand wheels, solenoid valves and other accessories.

viii. Alarm annunciation system for hardware/software failure, process parameters deviations (out of range).

ix. Online Uninterrupted Power Supply (UPS) Systems for powering PLC and other C&I systems. Other voltage level as required are in Bidder's scope.

x. All local control Panels, Gauge Boards, stanchions, brackets, etc. required for mounting the instruments as per requirements.

xi. All local instruments e.g. – pressure gauges / switches, level gauges / switches, flow gauges, flow switches etc. with all necessary accessories.

xii. C&I cables including prefab cables, serial link cable etc.

xiii. Rating plates, Nameplates and Labels for all C&I items.

xiv. Complete erection hardware such as tube, pipe, trays, cable glands, valves, manifold, fittings, ties, TBs, identification tags, etc.

xv. Calibration of all the sensors/instruments shall be in the bidder's scope as per requirement.

(E) Software

Bidder shall be responsible for all software licensing for design, development, debugging, system engineering, customizing, installation, tuning and commissioning, Training and furnishing manuals, and documentation as required. All PLC programs should be in ladder/FBD.

(F) Drawings and Documents

Submission of Drawings and Documents by the Successful Bidder

Bidder shall furnish system description, operational write-up, bill of materials, drawings, data, information, technical catalogues and other details required to fully establish the capability and performance of the equipment and systems offered. On award of the contract, the successful Bidder shall submit progressively all drawings and documents. The Drawings / documents shall include the following:

i. Bill of Materials of items indicating make along with technical catalogue.

ii. PLC architecture with write up explaining control Strategy.

iii. List of recommended spares for all the equipment supplied.

iv. All drawings, documents/leaflet, product catalogue to establish product quality and completeness of supply.

v. Final version of all as built drawings.

vi. Block and logic diagram of Automation system with write-up.

vii. Specification for the complete C&I equipment and systems.

viii. Detail of interconnection & wiring diagrams of all the panel-desk, automatic control cabinets/consoles, etc.

ix. Back-up of program, operating software and other control systems.

x. Schedule of Alarms, Consolidated Schedule of input/outputs for PLC, Flow chart / Function control diagram for auto control loops, open loop & sequential logic.

xi. Instrument loop drawings showing all interconnecting devices, JB Schedule etc.

xii. Data sheet for all instruments, Instrument list, and Pneumatic & Process hookup drawings.

xiii. Calculation of control valve sizing and data sheets.

xiv. Flow element sizing calculation and data sheets.

xv. License copies of all the operating and application software.

xvi. Any other relevant data, drawings/documents and information necessary for review of items whether specifically mentioned or not, shall be furnished by Bidder.

12. WATER ANALYSIS LABORATORY

i) The successful bidder shall have to design and construct a state-of-the-art water analysis laboratory as per the details cited in the civil works section of this tender document. Further, the bidder has to supply, install & commission all the laboratory instruments (NABL certified) as mentioned below for carrying out detailed analysis of the water offline.

ii) The successful bidder shall also supply the apparatus, glassware, chemicals/reagents and consumables etc necessary for carrying out the water analysis during warranty period.

Table 4: List of equipment required for the laboratory

S. No.	Name of equipment	Units Required
i.	Spectrophotometer	01
ii.	pH Meter	01
iii.	Conductivity Meter	01
iv.	DO Meter	01
v.	TDS Meter	01
vi.	Salinity Meter	01
vii.	Hot Plate	01
viii.	Hot Air Oven	01
ix.	Vacuum pump	01
x.	BOD Incubator	01
xi.	Digital Titrator Kit	01
xii.	SDI Kit	01
xiii.	Glassware (Covering all parameters)	As required for the analysis of 10 samples per day.
xiv.	Chemicals (Covering all parameters)	As required for the analysis of 10 samples per day.
xv.	Miscellaneous items	All other items other than S. No. 1-16, which are needed to perform the testing of said parameters of water and should be of high quality.

A. SPECIFICATION FOR BENCHTOP UV-VISIBLE SPECTROPHOTOMETER

i) The spectrophotometer instrument shall be a multi wavelength, UV-Visible, Split Beam/Dual Beam spectrophotometer designed for laboratory analysis of water parameters.

ii) The Required reagents for the water parameters should be from the same manufacturer.

iii) The wavelength range of the instrument shall be from 190 nm to 1100 nm with accuracy of ±1 nm & resolution of 0.1 nm.

iv) The instrument shall be capable of measuring aluminum; arsenic; chlorine dioxide; chlorine; chromium; color; copper; fluoride; iron; manganese; nitrogen (as ammonia, nitrate, nitrite, total nitrogen); chemical oxygen demand; phosphonates; phosphorus; potassium; silica; sulfate; sulfide; sulfite; surfactants; suspended solids; , zinc and many more .

v) The Following pre-programmed Tests shall conform to USEPA-approved methods:
Arsenic; Chlorine Dioxide; Chlorine, Free; Chlorine, Total; Chromium, Hexavalent; Copper; Fluoride; Iron (Total); Manganese; Nickel; Nitrogen (Ammonia); Nitrogen (Nitrite); Chemical Oxygen Demand; Phenols; Phosphorus (Reactive);Phosphorus (Total); Sulfate; Sulfide; and Zinc.

vi) The instrument shall be equipped with storage capacity from 4000-5000 data points & more than 100 user-defined calibrations.

vii) The interface of the instrument shall be graphical with touch screen.

viii) The instrument shall be capable of Sample Cell Compatibility Rectangular: 10, 20, 30, 50 mm, 1 inch; round: 13 mm, 16 mm, 1 inch & Optional 100 mm rectangular cell with additional adapter.

ix) The instrument shall provide graphical display and be capable of printing test results.

SPECIFICATIONS :				
Operating Mode		**:**Transmittance (%), absorbance and concentration (wavelength, time)		
Optics		**:**	Split Beam / Dual Beam	
Source Lamp		**:**	Tungsten (visible range), deuterium (UV range)	
Wavelength Range		**:**	190 - 1100 nm	
Wavelength Accuracy		**:**	±1 nm	
Wavelength Selection		**:**	Automatic, based on method selection	
Photometric Accuracy		**:** <1% at 0.5-2.0 Abs at 546 nm		
Scanning Speed			5 mAbs at 0.0-0.5 Abs	
		: 900 nm/min (in 1 nm steps)		
Display		**:** TFT 7 inch color touch screen		
Data Logger		**:**	Minimum 4000- Maximum 5000 data points (result, date, time,	
			sample-ID, user- ID)	
Sample Cell Compatibility		**:** Rectangular: 10, 20, 30, 50 mm, 1 inch;		round: 13 mm, 16 mm, 1 inch
Instrument Enclosure Rating		**:**	IP 20 with closed lid	

SCOPE OF SUPPLY: The instrument should supply with Basic instrument, 1 Inch matched Glass sample cell, basic user manual, a multi adapter for round and rectangular vials, CD with manual and procedure manual in .pdf format. Power cords

B. SPECIFICATION OF BOD INCUBATOR

1. BOD Incubator Capacity: 4 Cubic ft., 100 Liters Double walled Construction. Inner chamber SS 304. Outer Chamber M.S. Duly Power Coated Surface/ Duco finish.
2. Temperature range 5C to 50C accuracy +/-0.5C.
3. Temperature control by Electronic digital controller cum Indicator with P.T – 100 sensors, 'PUF' Insulation.
4. Refrigeration by hermetically sealed emersion Copeland' compressor with 'CFC free' Gas (ECO friendly), with air circulation fan uniform temperature.
5. Unbreakable transparent acrylic inner full view door apart from double walled outer, Door, with magnetic gasket

6. Unit provided with fiber wheels for easy movement; illumination lamp provided inside, the chamber with switch.
7. Unit provided with SS Rod type trays for keeping test sample.
8. Inner Dimensions (H x W x D cm) : 50 x 50 x 40
9. No. of Trays : 2

C. DUAL-INPUT MULTI-PARAMETER METER FOR MEASUREMENT OF PH, CONDUCTIVITY, DISSOLVED OXYGEN, TEMPERATURE, TDS & SALINITY.

Meter should simultaneously measure pH, Cond, or Luminescent DO using with any two intelligent probes. Multiparameter should compatible with intelligent gel filled pH, 4 – Pole graphite Conductivity, LDO. Multiparameter should have EPA and ASTM accepted Luminescent DO Method.

i. Dual display of two different parameters/probes
ii. A single meter to measure pH, Conductivity, and LDO, Ion Selective Electrodes Like: Fluoride, Nitrate, Ammonia, chloride
iii. Intelligent probes to store the calibration data
iv. View information from two probes on one screen (up to two parameters)
v. Maintenance free Luminescent DO probe (No membranes, filling solutions to replace)

Multi-parameter instrument should have the following features and specifications.

pH:

Range: 0 – 14 pH

Resolution: 0.1/0.01/0.001

mV:

Range: -1500 to 1500 mV

Resolution: 0.1mV

Conductivity:

Range: 0.01 µS/cm to 200 mS/cm (5 ranges)

Resolution: 0.01 µS/cm

Accuracy: ± 0.5% of reading

Salinity:

Range: 0 to 42 ppt Resolution: 0.01 ppt Accuracy: ± 0.1 ppt

TDS:

Range: 0 to 50,000 mg/L Resolution: 0.1 mg/L Accuracy: ± 0.5% of reading

Luminescent Dissolved Oxygen (LDO):

Range: 0 to 20 mg/L (0 to 200%) Resolution: 0.01 mg/L

Accuracy: ± 0.1 mg/L for 0.1 to 8.0 mg/L & ± 0.2 mg/L for greater than 8.0 mg/L.

Display: Shall have large digital display for simultaneous readings from two probes

Power: 4 AA batteries; Battery life: > 200 hours; AC/DC power adapter

D. <u>Digital Titrator Kit</u>

Precision, lightweight dispensing device for quick and easy titrations at the bench or in the field. The titrator should be able to accommodate interchangeable titrant cartridges, so multiple titrations with changing the cartridge and delivery tube is possible. The instrument should be durable and able to withstand heavy use with comfortable hand grip, accurate delivery knob to precisely control titrant flow by advancing a plunger which forces solution from the cartridge. The titrator should feature a digital counter which can be reset to zero after completion of titration.

Specification

Delivery 800 digits/mL
Accuracy ±1%. Uncertainty of readings is 1 digit.
Weight Preferably less than 150g

Scope of Supply

The scope of supply should include

1) Digital Titrator Instrument ,
2) Cartridges/ Reagents for Total Hardness, Calcium Harndess, Chloride, Alkanity .
3) Manual, Delivery Tubes and a carrying case
4) The Instrument and reagents should be of same Make

E. SPECIFCIATION OF HOT AIR OVEN

Forced convection system ensures good mixing, strong dispersion and maintains higher temperature uniformity inside the chamber.
Synthetic door gasket made of neoprene on the double walled door.
User oriented design of shelves makes you adjust each space of shelves without difficulty.
Adjustable two ventilation slides control inner air / vapour circulation.
Beaded heating elements are placed in ribs, at bottom and sides for uniform heat distribution

Features:-

- Internal Dimension (WxDxH) mm : 605x605x605
- Capacity : 224 ltrs
- Heat Load : 2.25 KW
- No. Of Shelves : 02
- Temperature Range : 50°C to 350°C±1°c
- Temp. Controller : Microprocessor Based Digital Temperature Indicator cum Controller.
- Display : Digital LED

F. SPECIFICATION OF LABORATORY HOT PLATE

RECTANGULAR MODEL

- Rugged, steel construction with solid cast iron plate on top.
- Heaters are designed and distributed for uniform surface temperature.
- With capillary thermostat for accurate temperature control.
- Electrically operated on 230 VAC, Single phase

Size : 30 x 45 cm (L x B)
Rating : 1.5 kW

13. Drawings and Documents to be furnished by the successful tenderer

The Tenderer shall furnish along with the proposal illustrative pamphlets and literatures of all the equipment, motors, drives, instruments and controls, P&I diagram of the plant offered clearly showing their scope, recommended layout of the plant indicating hydraulic gradient, bulk material list for piping, fittings and valves, performance curves for pumps and blowers offered, dimensional drawings of central control panel instruments along with make, model etc., interlock schematics, list of instruments and annunciation provided, instrument data sheets, panel layout along with SCADA diagram, etc.

(A) Drawings: (The successful bidder has to submit the following drawings and details for approval to start the work within 30 days from the date of placing of LOI/Purchase order whichever is earlier.)

a. P&I diagram of the complete Plant offered along with process data.

b. Layout drawings (Plan & Elevation) of the plant showing building, control room, MCC room, earth mat, illumination system, tanks, location of all equipment, terminal points, etc. under this scope of supply along with hydraulic gradient.

c. Piping layout (plan, section and details) of the complete plant along with terminal points.

d. General Arrangement drawings (plan, section & elevation) of each equipment offered indicating overall dimensions, specification& location.

e. All relevant civil and structural, architectural, water supply, drainage and sanitation drawings along with respective design calculations for the complete plant are to be submitted.

f. General Arrangement drawings of electrical equipment with specification.

g. Certified performance curves of pumps, blowers and all other rotating equipment's.

h. Drawings, technical particulars and catalogues of all bought out items.

i. Other detail drawings as required.

j. Schedule for fire protection system and other industrial safety systems.

k. Bar chart along with Quality Assurance Plan (QAP) showing engineering, procurement of materials, manufacturing, and issue of purchase orders for bought out items, delivery of each equipment and material at site, construction schedule etc. and monthly progress reports.

Note:

All relevant structural drawings after soil testing along with respective design calculations for the complete plant are to be submitted within 45 days.

(B) Documents:

The successful bidder has to submit the following documents for approval to start the work as specified below from the date of placing of LOI/Purchase order whichever is earlier.

i. Certified motor list indicating numbers, type of motors, ratings and speeds, starting torques etc. within 30 days
ii. Cable schedules for the complete plant within 90 days.
iii. Certified part list of each equipment under this specification within 90 days.
iv. Test procedures and details of various tests to be carried out at the time of PDI call.
v. Material test certificates at the time of PDI/supply.
vi. Bill of material for piping, fittings and valves for the complete plant within 120 days.
vii. List of equipment, drives, motors, encoders, etc. with detail specification (including make and model) within 90 days.
viii. Installation, operation and maintenance manuals at the time of supply.
ix. Number of copies of drawings/ documents with soft copies to be submitted by the successful Tenderer are as follows:
    a. Preliminary drawings : 6 copies
    b. Approval drawings : 6 copies
    c. Final approved drawings: 8 copies and one soft copy.
    d. Installation, operation and maintenance manuals : 12 copies.
    e. Test certificates: 6 copies.

14. Time of completion

The completion time of this project including design/ supply/ civil construction/ installation/ commissioning of all equipment, instruments, control panels, piping, fittings, valves, cables etc for Phase-1 as mentioned at Section 6 (Capacity and Phases of the Project) of this tender as well as final trial run and testing shall not exceed Eight (8) months from the date of placement of purchase order or letter of intent (LOI) whichever is earlier.

15. Final Acceptance Test (FAT) criteria

- The phase-wise ZLD system shall be run for a minimum period of continuous 30 days at minimum 20 hours runnability per day as the final acceptance test criteria from the date of final commissioning, during which it should successfully and satisfactorily demonstrate the parameters of water consistently as given in Table-1, Table-2 & Table-3.
- If the plant stops for some reason for more than 4 hours on any day, the FAT day shall start afresh and continue for next 30 days.
- All the consumables, chemicals, spares etc. shall be supplied by the bidder during FAT period.

16. Brief of Battery Limits/Scope

Sr.no.	Work	Bidder's Scope	SPM's Scope
1.	Available treated effluent	From outlet of filtration plant/ underground tank 1 (UGT-1) by laying and termination of suitable pump/pipeline.	Existing pumps of filtration plant and UGT-1.
2.	RO permeate	From degasser tower to existing underground tank of WTP by laying and termination of suitable pump/pipeline.	Underground existing tank at WTP
3.	Electrical Power	Industrial substation in WTP area by laying and termination of cable from both the sides.	Spare feeder from the existing LT panel at industrial substation.
4.	Fresh Water/Potable Water at WTP	From existing pump house by laying and termination of suitable pump/pipeline (approx. 100 meter).	NA
5.	Treated effluent for civil construction and other miscellaneous work	From UGT-1 by laying and termination of suitable pump/pipeline (approx. 100 meter)	NA
6.	Instrument air	Supply, installation and commissioning of suitable air compressor, air dryer etc. of required capacity.	NA
7.	Safety and security of the material	The safety and security of the supplied material from rain, water, storm, theft etc. will be the responsibility of the bidder till the acceptance of the plant.	May permit the construction of temporary hut/shed which shall be dismantled by the bidder after completion of the project.
8.	Safety of the manpower deployed by the bidder at the project.	All the PPEs and safety equipment, tool and tackles shall be provided by the bidder to ensure the compliance of safety norms as per factory act.	NA

Figure-1: Battery limit starting point

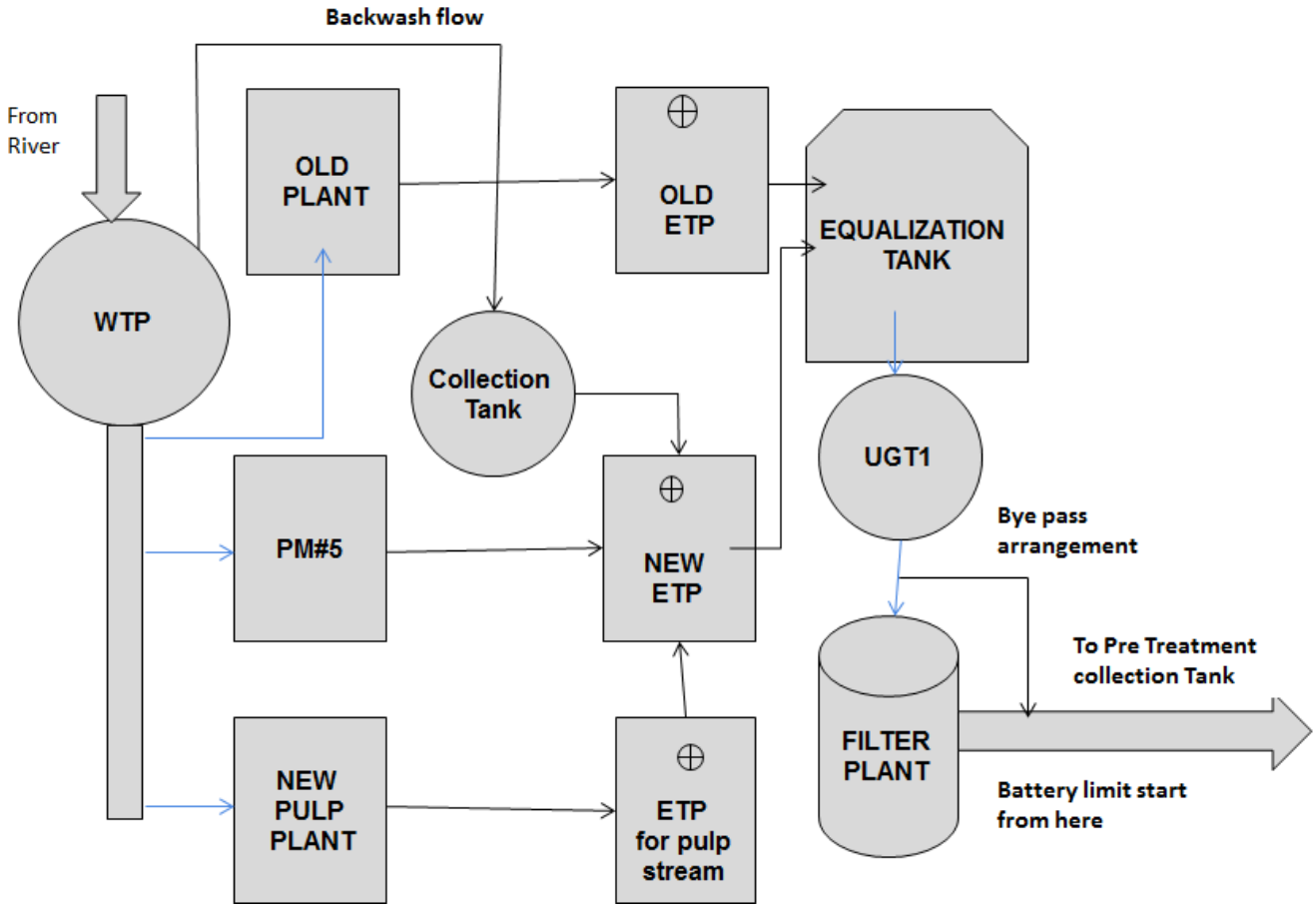


Figure-2: Existing ETP for paper stream (13500 KLD)

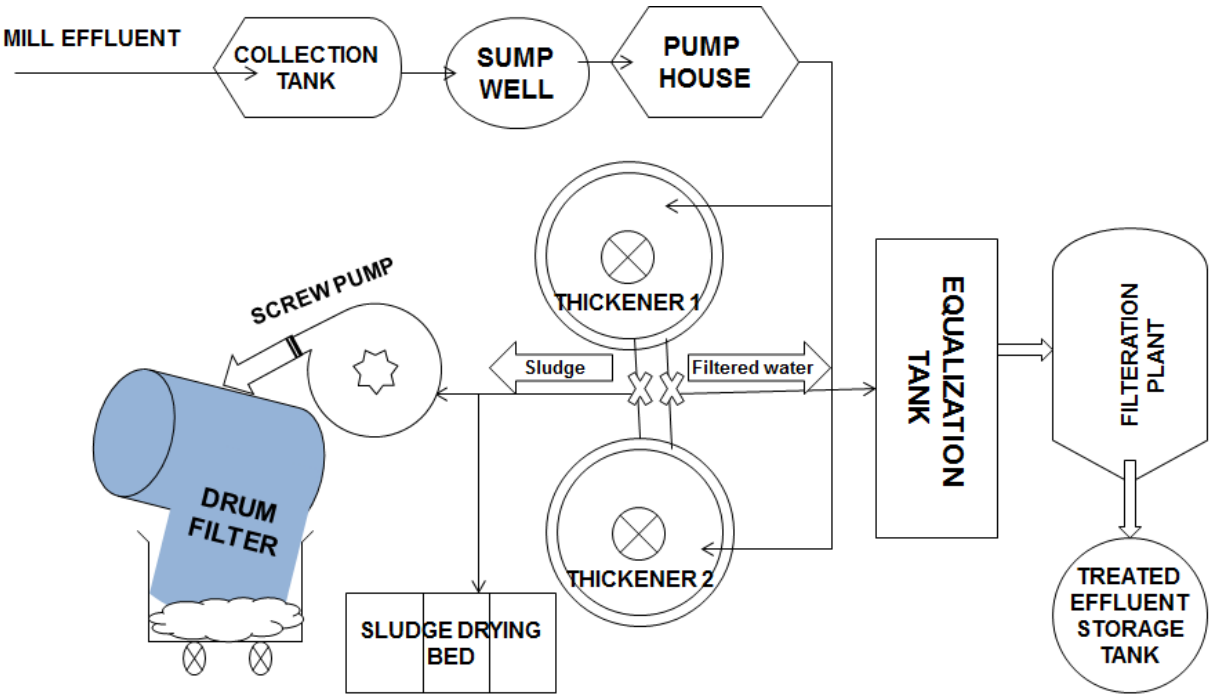


Figure-3: Existing ETP for pulp stream (250 KLD)

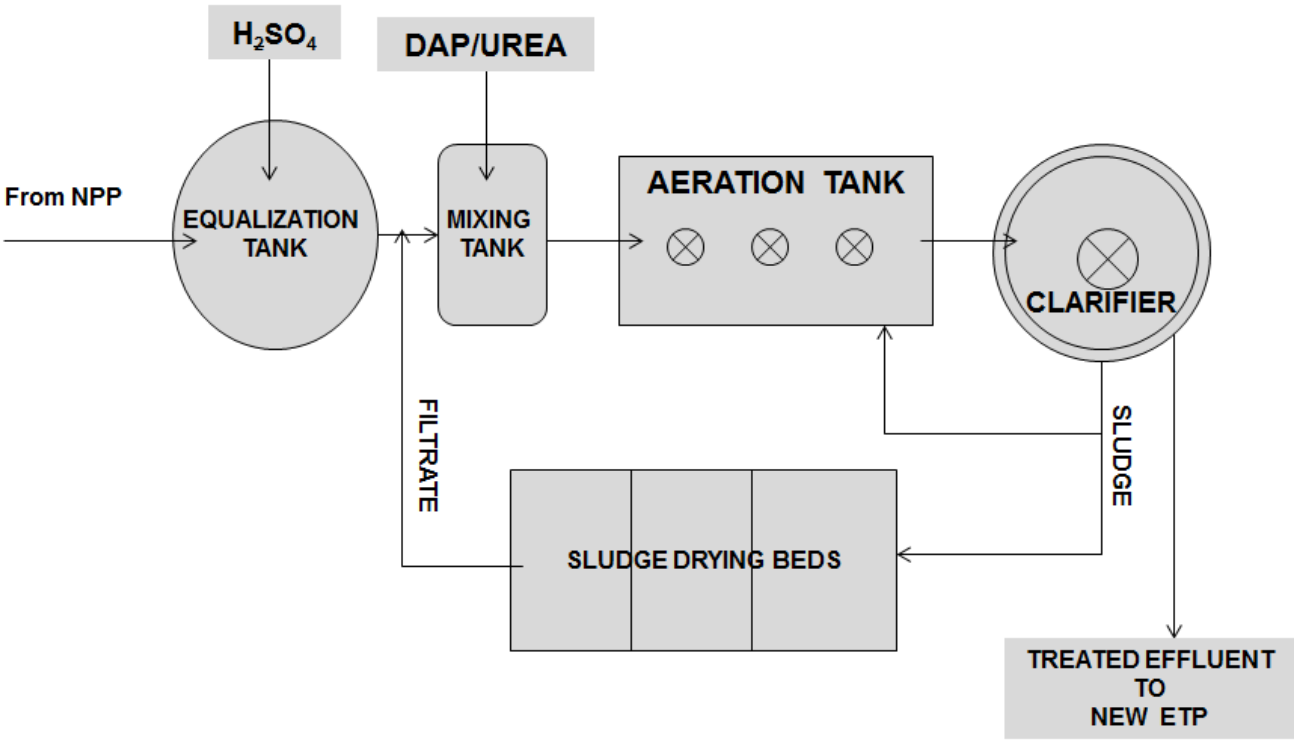


Figure-4: Existing New ETP for PM#5 (3500 KLD)

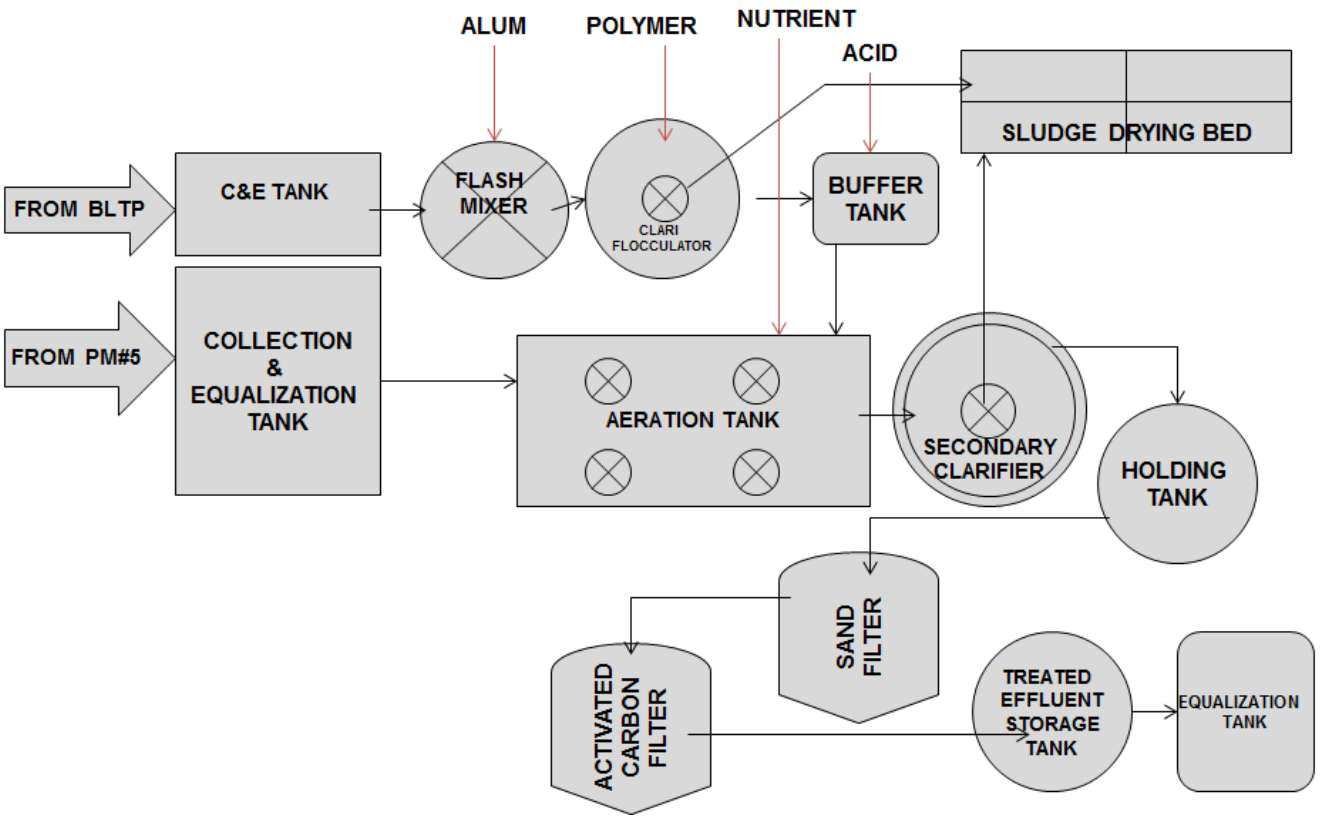


Figure-5: Proposed centralized sensor arrangement for online parameters measurement

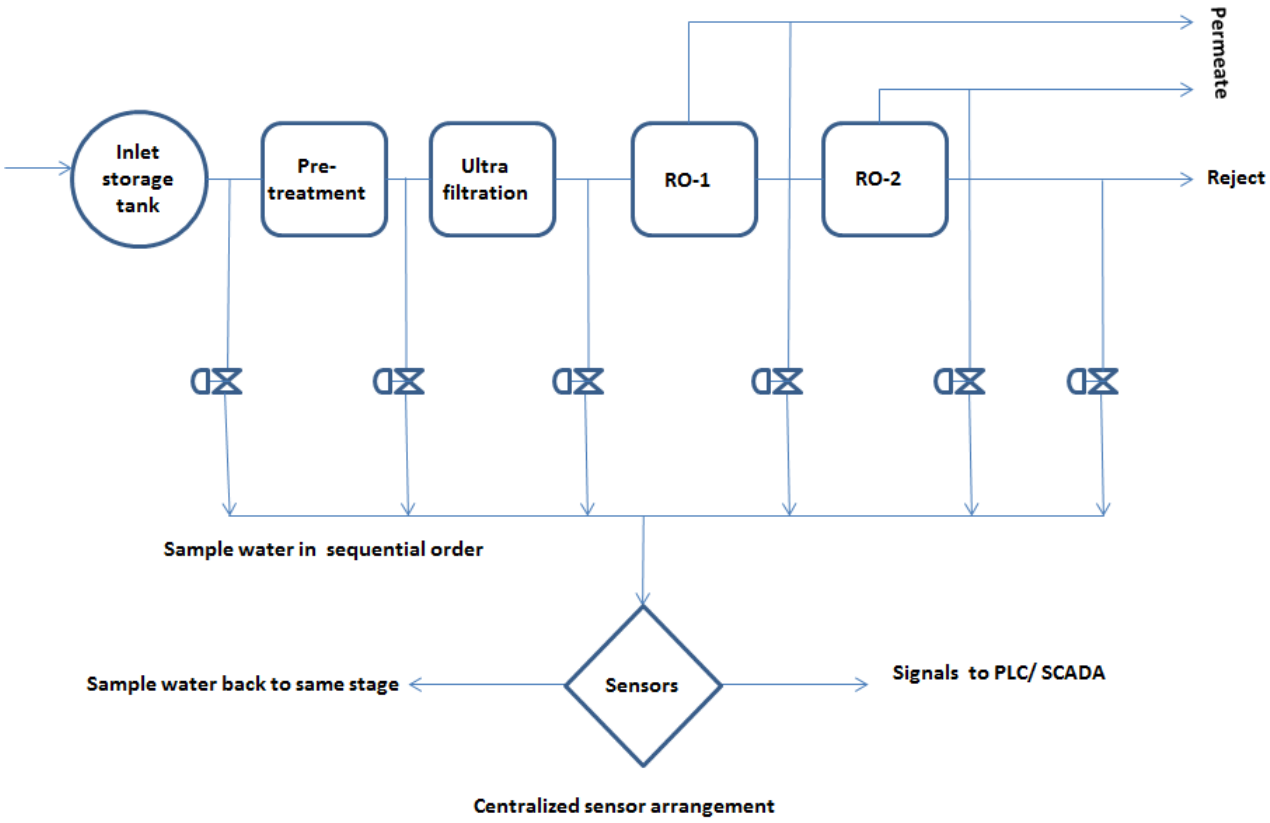


Figure-6: Battery limit termination point

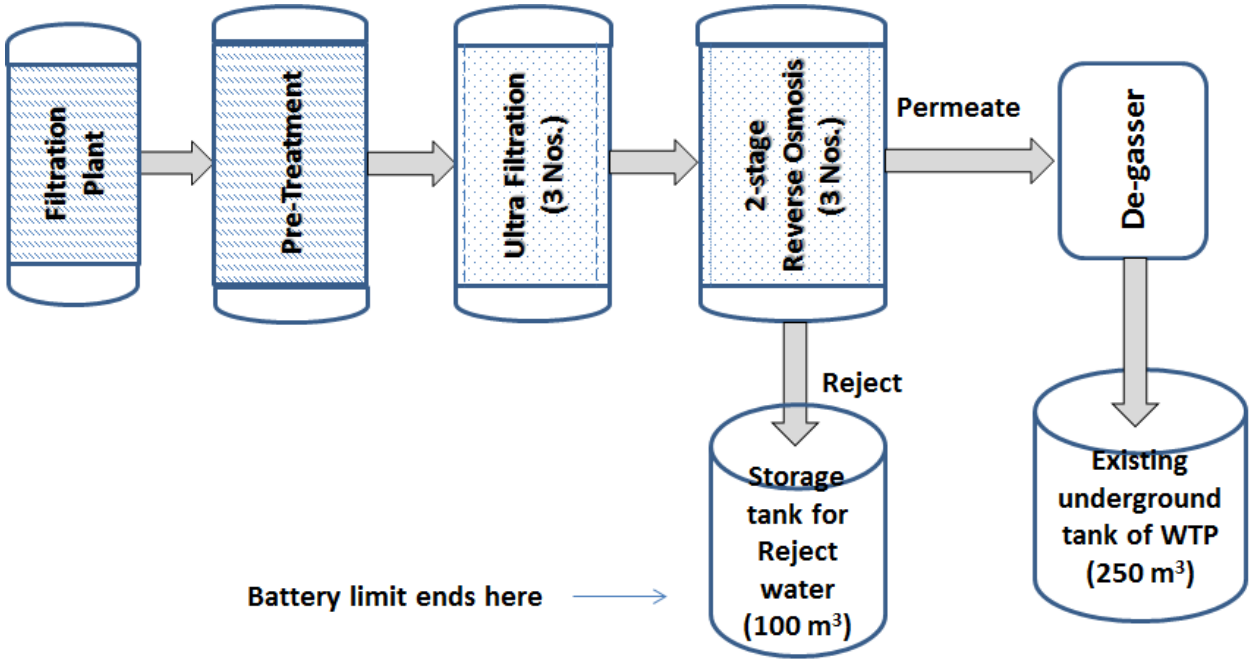


Figure-7a: Plan for shed and building

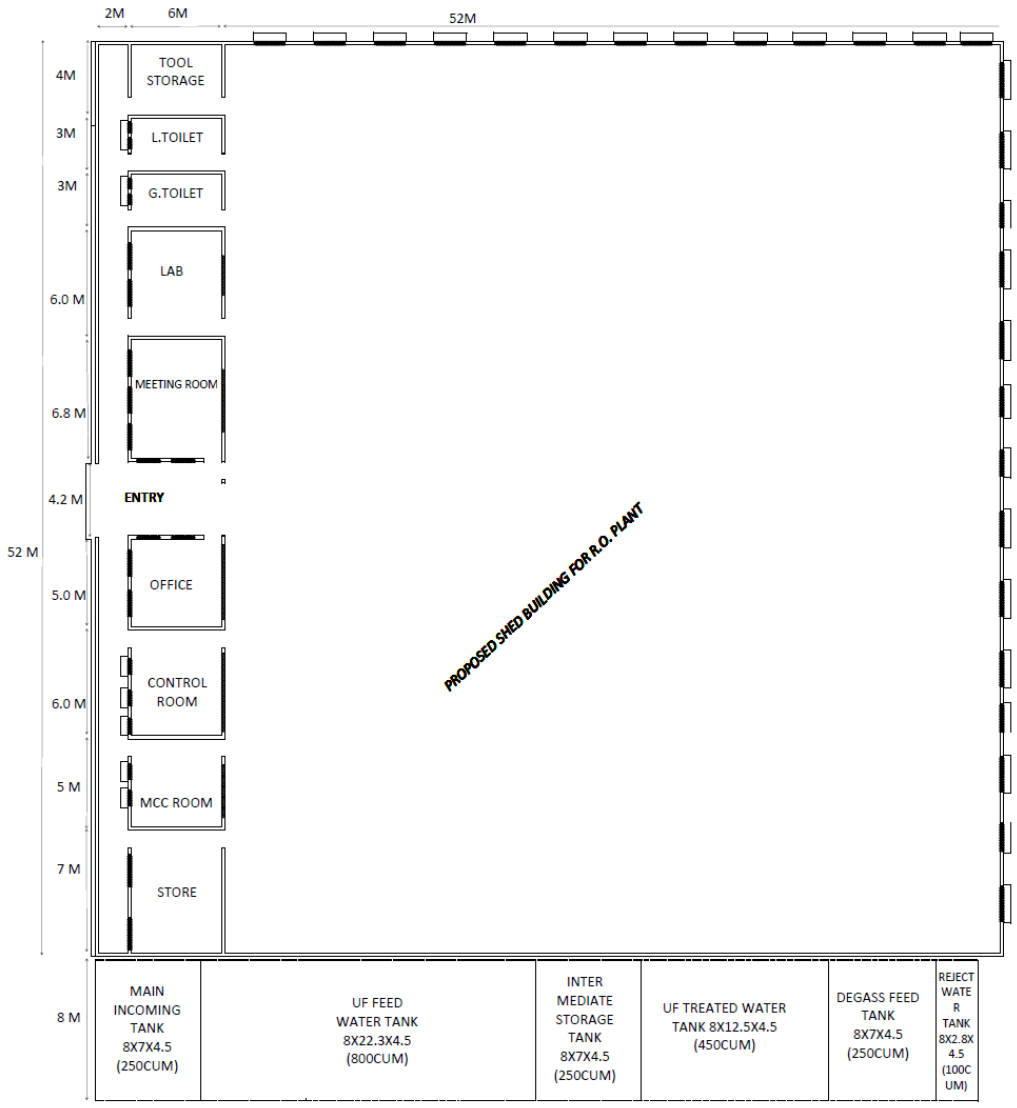
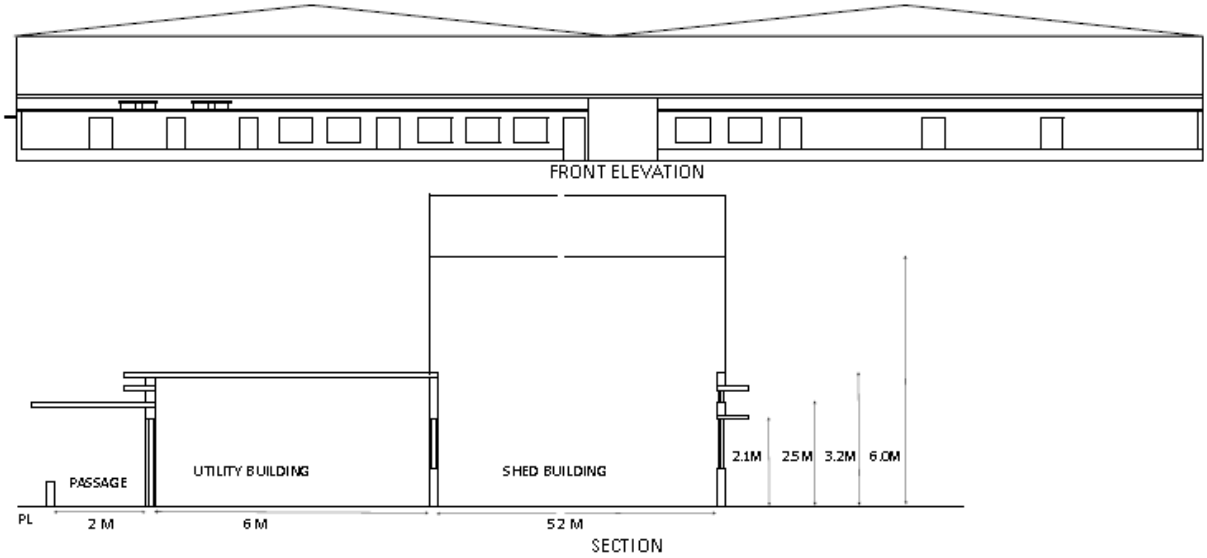


Figure-7b: Elevation for shed and building



(Section-VIII)

QUALITY CONTROL REQUIREMENTS

As per section VII of the tender document.

(Section-IX)

QUALIFICATION / ELIGIBILTY CRITERIA

Experience & Past Performance	Bidder Firm should have manufactured, supplied, installed and commissioned at least one similar industrial Reverse Osmosis plant along with Pre-filter and Ultrafiltration unit of minimum 1500 KLD during last five years ending 31st March-2017.
Capability Equipment & Manufacturing Facilities	The Bidder Firm must have an annual capacity to manufacture and supply 2 Nos. of Reverse Osmosis plant along with Pre-filter and Ultrafiltration unit of minimum 1500 KLD capacity.
Financial Standing	The average annual turn-over of the Bidder during the last three (3) years, ending 2014, 2015 and 2016 in case the financial year is maintained calendar year wise; or 2014-15, 2015-16 and 2016-17 in case the financial year is maintained ending 31st March 2017, should be more than Rs.10.62 crore or USD 1667976.
	Bidder Firm should not have suffered any financial loss for more than one year during the last three years ending 31st December, 2016 in case financial year maintained calendar year wise or 31st March, 2017. .
	The net worth of the firm should not have eroded by more than 30 % in the last three years ending March 31st 2017.
Note:	In this tender, either the authorized representative on behalf of the principal/OEM or Principal/OEM himself can bid, both cannot bid simultaneously for the same item/product in this tender.
	If the authorized representative submits bid on behalf of the principal/OEM, the same authorized representative shall not submit a bid on behalf of another principal/OEM in the same tender for the same item/product.

Note:

A. All experience, past performance and capacity / capability related/ data should be certified by the authorized signatory of the bidder firm. The credentials regarding experience and past performance to the extent required as per eligibility criteria submitted by bidder may be verified from the parties for whom work has been done.

B. All financial standing data should be certified by accountants e.g. Chartered Accounts (CA) in India and Certified Public Accountants/Chartered Accountants of other countries.

C. Bidder to furnish stipulated documents is support of fulfillment of qualifying criteria. Non-submission or incomplete submission of documents may lead to rejection of offer.

MOST IMPORTANT NOTE:
BIDDER TO FURNISH STIPULATED DOCUMENTS IN SUPPORT OF FULFILLMENT OF QUALIFYING CRITERIA. NON-SUBMISSION OR INCOMPLETE SUBMISSION OF DOCUMENTS MAY LEAD TO REJECTION OF OFFER.

(SECTION – X)

Tender Form

ACCEPTANCE OF TERMS & CONDITIONS

Date…….

To,

…….
…….
……. (Complete address of SPMCIL)

Ref: Your Tender document No. ……dated ……

We, the undersigned have examined the above mentioned tender enquiry document, including amendment No. --------, dated --------- (*if any*), the receipt of which is hereby confirmed. We now offer to supply and deliver……. *(Description of goods and services)* in conformity with your above referred document for the sum of **(as quoted in the Price Bid),** as shown in the price schedule(s), attached herewith and made part of this tender.

If our tender is accepted, we undertake to supply the goods and perform the services as mentioned above, in accordance with the delivery schedule specified in the List of Requirements.

We further confirm that, if our tender is accepted, we shall provide you with a performance security of required amount in an acceptable form in terms of GCC clause 6, read with modification, if any, in Section V – "Special Conditions of Contract", for due performance of the contract.

We agree to keep our tender valid for acceptance for a period up to -------, as required in the GIT clause 19, read with modification, if any in Section-III – "Special Instructions to Tenderers" or for subsequently extended period, if any, agreed to by us. We also accordingly confirm to abide by this tender up to the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.

…….. (Signature with date)

…….. (Name and designation)

Duly authorized to sign tender for and on behalf of

…….
…….

(SECTION – XI)

PRICE SCHEDULE- 1

PRICE SCHEDULE: The Price bid should clearly indicate the break-up of the price as under: -

FOR INDIGENOUS BIDDER

Name of Bidder:
Offer No. & Date:

Sl. No.	Description	Unit	8 Digit HSN/ 6 Digit SAC	Qty. (A)	Unit price (B)	GST % (C)	Total Amount {A*(B+C)}
(A)	**CIVIL Works**						
1.	Construction of prefab building including foundations, platforms, illuminations, ventilation etc.	Sq. m.		2700			
2.	Construction of utility buildings including fans and lightings.	Sq. m.		500			
3.	Furniture & fixtures (LS).	Lot		01			
4.	Construction of storage tanks.	Cu. m.		2100			
	Total (A) 1+2+3+4						
(B)	**PROCESS**						
5a.	Supply of electrical items including power & control cables and motor control Centre (MCC) and power control Centre (PCC) common for all the three phases.	Lot		1			
5b.	Installation & commissioning of electrical items including laying of power & control cables and motor control Centre (MCC) and power control Centre (PCC) common for all the three phases.	AU		1			
6a.	Supply of control room hardware (servers, PLC, SCADA, HMI, etc.) and software, programs common for all three phases.	Lot		1			
6b.	Installation & commissioning of control room hardware (servers, PLC, SCADA, HMI, etc.) and software, programs common for all three phases.	AU		1			
7a.	Supply of Water Testing laboratory including equipment, glassware, chemicals.	Lot		1			
7b.	Setting up, installation and commissioning of Water Testing laboratory including equipment, glassware, chemicals.	AU		1			

8a.	Supply of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-1 including all the required equipment/ instruments.	AU		1			
8b.	Installation & commissioning of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-1 including all the required equipment/ instruments.	AU		1			
9.	Operation and maintenance (manpower deployment and technical services) of finally accepted unit of phase 1 for a warranty period of 1 year. Spares shall be supplied by the tenderer free of cost during the warranty period.	Month		12			
10.	Supply & plantation of 200 nos. of coconut plants along the perimeter wall inside the SPM boundary (approx. 2 KM) with suitable pumping, pipeline for drip irrigation facility.	No. of Plant		200			
11.	Supply & plantation of 1000 nos. of plants along with land preparation and watering system.	No. of Plant		1000			
12a.	Supply of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-2 including all the required equipment/ instruments.	Lot		1			
12b.	Installation & commissioning of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-2 including all the required equipment/ instruments.	AU		1			
13.	Operation and maintenance (manpower deployment, service) of finally accepted unit of Phase-2 for a warranty period of 1 year. Spares shall be supplied by the tenderer free of cost during the warranty period.	Month		12			
14.	Supply & plantation of 1000 nos. of plants along with land preparation and watering system.	No. of Plant		1000			
15a.	Supply of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-3 including all the required equipment/instruments.	Lot		1			
15b.	Installation & commissioning of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-3 including all the required equipment/instruments.	AU		1			
16.	Operation and maintenance (manpower deployment, service) of finally accepted unit of Phase-3 for a warranty period of 1 year. Spares shall be supplied by the tenderer free of cost during the warranty period.	Month		12			

17.	Supply & plantation of 1000 nos. of plants along with land preparation and watering system.	No. of Plant		1000			
18	TOTAL (B) (5a+5b+6a+6b+…….+17)						
19	GRAND TOTAL (A +B)						

NOTE:

1. Conditional price & Variable Price in Tender are liable to be rejected.
2. Bidder should mention separately regarding Duties/Taxes otherwise tax exemption Certificate may be enclosed.
3. Quote your rates in your quotation as per the given above price schedule format only and accept our condition i.e. F.O.R., VALIDITY, DELIVERY PERIOD, PAYMENT TERMS AND ALL OTHER TERMS AND CONDITION INCLUDING G.C.C. & G.I.T. OF TENDER without any deviation otherwise your offer will be rejected without any communication.
4. **The method of evaluation of L1 criteria for awarding the contract shall be on consolidated offer submitted by the bidder.**
5. Mode of Payment: Payment will be made through RTGS/ NEFT (Please provide the details as required)

S.no.	**Details**	
1.	Name of supplier	.....
2.	Account No	.....
3.	Account Type	.....
4.	Name of the Bank	.....
5.	Branch	.....
6.	City	.....
7.	Branch Code	.....
8.	MICR Code	.....
9.	IFSC Code	.....
10.	GSTN No.	……

NOTE:

''BIDDER TO FURNISH STIPULATED DOCUMENTS ALONG WITH TENDER IN SUPPORT OF FULFILLMENT OF TENDER CRITERIA. FURTHER CORRESPONDENCE IN THIS REGARD WILL NOT BE ENTERTAINED FOR ANY REASON. NON-SUBMISSION OR INCOMPLETE SUBMISSION OF DOCUMENTS MAY LEAD TO REJECTION OF OFFER.”

_____

SIGNATURE OF BIDDER

(WITH NAME, DESIGNATION AND SEAL)

PRICE SCHEDULE

PRICE SCHEDULE: The Price bid should clearly indicate the break-up of the price as under: -
FOR FOREIGN/OVERSEAS BIDDER:-

Name of Bidder:
Offer No. & Date:

Sl. No.	Description	Unit	Qty. (A)	Total FOB Price	Total Freight Charges By Sea	Total Insurance Charges By Sea	Total CIF Price Mumbai Sea Port
(A)	**CIVIL Works**						
1.	Construction of prefab building including foundations, platforms, illuminations, ventilation etc.	Sq. m.	2700				
2.	Construction of utility buildings including fans and lightings.	Sq. m.	500				
3.	Furniture & fixtures (LS).	Lot	01				
4.	Construction of storage tanks.	Cu. m.	2100				
	Total (A) 1+2+3+4						
(B)	**PROCESS**						
5a.	Supply of electrical items including power & control cables and motor control Centre (MCC) and power control Centre (PCC) common for all the three phases.	Lot	1				
5b.	Installation & commissioning of electrical items including laying of power & control cables and motor control Centre (MCC) and power control Centre (PCC) common for all the three phases.	AU	1				
6a.	Supply of control room hardware (servers, PLC, SCADA, HMI, etc.) and software, programs common for all three phases.	AU	1				
6b.	Installation & commissioning of control room hardware (servers, PLC, SCADA, HMI, etc.) and software, programs common for all three phases.	AU	1				
7a.	Supply of Water Testing laboratory including equipment, glassware, chemicals.	AU	1				
7b.	Setting up, installation and commissioning of Water Testing laboratory including equipment, glassware, chemicals.	AU	1				

8.	Supply of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-1 including all the required equipment/ instruments.	AU	1				
9.	Installation & commissioning of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-1 including all the required equipment/ instruments.	Month	12				
10.	Operation and maintenance (manpower deployment and technical services) of finally accepted unit of phase 1 for a warranty period of 1 year. Spares shall be supplied by the tenderer free of cost during the warranty period.	No. of Plant	200				
11.	Supply & plantation of 200 nos. of coconut plants along the perimeter wall inside the SPM boundary (approx. 2 KM) with suitable pumping, pipeline for drip irrigation facility.	No. of Plant	1000				
12a.	Supply & plantation of 1000 nos. of plants along with land preparation and watering system.	AU	1				
12b.	Supply of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-2 including all the required equipment/ instruments.	AU	1				
13.	Installation & commissioning of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-2 including all the required equipment/ instruments.	Month	12				
14.	Operation and maintenance (manpower deployment, service) of finally accepted unit of Phase-2 for a warranty period of 1 year. Spares shall be supplied by the tenderer free of cost during the warranty period.	No. of Plant	1000				

15a.	Supply & plantation of 1000 nos. of plants along with land preparation and watering system.	AU	1				
15b.	Supply of Pre-treatment, Ultrafiltration and 2-stage Reverse Osmosis units complete for Phase-3 including all the required equipment/instruments.	AU	1				
16.	Operation and maintenance (manpower deployment, service) of finally accepted unit of Phase-3 for a warranty period of 1 year. Spares shall be supplied by the tenderer free of cost during the warranty period.	Month	12				
17.	Supply & plantation of 1000 nos. of plants along with land preparation and watering system.	No. of Plant	1000				
18	TOTAL(B)(5a+5b+6a+6b+…+17)						
19	GRAND TOTAL (A +B)						

NOTE:

1. Bidder should mention separately regarding Duties/Taxes etc., whether they are chargeable extra or inclusive in the price. Otherwise tax exemption Certificate shall be enclosed.

2. Price bids are to be given in the above format only. Conditional price bids are liable to be rejected.

3. The method of evaluation of L1 criteria for awarding the contract shall be decided taking into consideration the total landed price up to SPM Hoshangabad.

''BIDDER TO FURNISH STIPULATED DOCUMENTS ALONG WITH TENDER IN SUPPORT OF FULFILLMENT OF TENDER CRITERIA. FURTHER CORRESPONDENCE IN THIS REGARD WILL NOT BE ENTERTAINED FOR ANY REASON. NON-SUBMISSION OR INCOMPLETE SUBMISSION OF DOCUMENTS MAY LEAD TO REJECTION OF OFFER.”

_____

SIGNATURE OF BIDDER

(WITH NAME, DESIGNATION AND SEAL)

(SECTION-XII)

QUESTIONNAIRE

The tenderer should furnish specific answers to all the questions/ issues mentioned below. In case a question/ issue does not apply to a tenderer, the same should be answered with the remark "not applicable".

Wherever necessary and applicable, the tenderer shall enclose certified copy as documentary proof/Evidence to substantiate the corresponding statement.

In case a tenderer furnishes a wrong or evasive answer against any of the under mentioned question/Issues, its tender will be liable to be ignored.

1. Brief description and of goods and services offered:

2. Offer is valid for acceptance up to …….

3. Your permanent Income Tax A/ C No. as allotted by the Income Tax Authority of Government of India
Please attach certified copy of your latest/ current Income Tax clearance certificate issued by the above authority.

4. Status:

a. Are you currently registered with the Directorate General of Supplies & Disposals (DGS&D), New Delhi, and/ or the National Small Industries Corporation (NSIC), New Delhi, and/ or the present SPMCIL and/ or the Directorate of Industries of the concerned State Government for the goods quoted? If so, indicate the date up to which you are registered and whether there is any monetary limit imposed on your registration.

b. Are you currently registered under the Indian Companies Act, 1956 or any other similar Act? Please attach certified copy(s) of your registration status etc. in case your answer(s) to above queries is in affirmative.

5. Please indicate name & full address of your Banker(s)

6. Please state whether business dealings with you currently stand suspended/ banned by any Ministry/ Deptt. of Government of India or by any State Govt.

……. (Signature with date)
…….
…….

(Full name, designation & address of the person duly authorized sign on behalf of the tenderer) For and on behalf of
…….
…….
(Name, address and stamp of the tendering firm)

(SECTION – XIII)

BANK GUARANTEE FORM FOR EARNEST MONEY DEPOSIT

NOT APPLICABLE

(SECTION – XIV)

MANUFACTURER' S AUTHORIZATION FORM

To,
……..
……..

(*Name and address of SPMCIL*) Dear Sirs,

Ref. Your Tender document No……., dated …….

We, ……., who are proven and reputable manufacturers of …… (*name and description of the goods offered in the tender*) having factories at……, hereby authorize Messrs…….. (*name and address of the agent*) to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred tender enquiry documents for the above goods manufactured by us.

We further confirm that no supplier or firm or individual other than Messrs…….. (*name and address of the above agent*) is authorized to submit a tender, process the same further and enter into a contract with you against your requirement as contained in the above referred tender enquiry documents for the above goods manufactured by us.

We also hereby extend our full warranty, as applicable as per clause 16 of the General Conditions of Contract read with modification, if any, in the Special Conditions of Contract for the goods and services offered for supply by the above firm against this tender document.

Yours faithfully,
……..
……

[*signature with date, name and designation*]

for and on behalf of Messrs……

[*name & address of the manufacturers*]

Note: This letter of authorization should be on the letter head of the manufacturing firm and should be signed by a person competent and having the power of attorney to legally bind the manufacturer.

(Section XV)

Bank Guarantee Form for Performance Security

_____[insert: Bank's Name, and Address of Issuing Branch or Office]
Beneficiary: _____[insert: Name and Address of SPMCIL] Date: _____
PERFORMANCE GUARANTEE No.: _____

WHEREAS …… (name and address of the supplier) (hereinafter called "the supplier") has undertaken, in pursuance of contract no…….. dated ……. to supply (description of goods and services) (herein after called "the contract").

AND WHEREAS it has been stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the contract;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of …… …… …… …… …….. (amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the supplier before presenting us with the demand. We further agree that no change or addition to or other modification of the terms of the contract to be performed thereunder or of any of the contract documents which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

We undertake to pay SPMCIL up to the above amount upon receipt of its first written demand, without SPMCIL having to substantiate its demand.

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

…….
(Signature of the authorized officer of the Bank)

……
Name and designation of the officer

……

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

……
Name and designation of the officer

……

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

CONTRACT FORM

(Address of SPMCIL‟s office issuing the contract) Contract No……. dated……. This is in continuation to this office‟ Notification of Award No…….. dated …….

1. Name & address of the Supplier: ……..
2. SPMCIL‟s Tender document No…… dated……. and subsequent Amendment No……., dated…… (If any), issued by SPMCIL
3. Supplier‟s Tender No…… dated…….. and subsequent communication(s) No…… dated …….. (If any), exchanged between the supplier and SPMCIL in connection with this tender.
4. In addition to this Contract Form, the following documents etc, which are included in the documents mentioned under paragraphs 2 and 3 above, shall also be deemed to form and be read and construed as part of this contract:
   i. General Conditions of Contract;
   ii. Special Conditions of Contract
   iii. List of Requirements;
   iv. Technical Specifications;
   v. Quality Control Requirements;
   vi. Tender Form furnished by the supplier;
   vii. Price Schedule(s) furnished by the supplier in its tender;
   viii. Manufacturers‟ Authorization Form (if applicable for this tender);
   ix. SPMCIL‟s Notification of Award

Note: The words and expressions used in this contract shall have the same meanings as are respectively assigned to them in the conditions of contract referred to above. Further, the definitions and abbreviations incorporated under Section –V - „General Conditions of Contract‟ of SPMCIL‟s Tender document shall also apply to this contract.

5. Some terms, conditions, stipulations etc. out of the above-referred documents are reproduced below for ready reference:

   1. Brief particulars of the goods and services which shall be supplied/ provided by the supplier are as under:

Schedule No	Brief description of goods/ services	Accounting unit	Quantity to be supplied	Unit Price (in Rs.)	Total price

Any other additional services (if applicable) and cost thereof: ……..
Total value (in figure) _____(In words) ____

(ii) Delivery schedule
(iii) Details of Performance Security
(iv) Quality Control
   (a) Mode(s), stage(s) and place(s) of conducting inspections and tests.
   (b) Designation and address of SPMCIL‟s inspecting officer

(v) Destination and dispatch instructions
(vi) Consignee, including port consignee, if any
(vii) Warranty clause
(viii) Payment terms
(ix) Paying authority

……
(Signature, name and address of SPMCIL"s authorized official)

For and on behalf of……. Received and accepted this contract ……..

(Signature, name and address of the supplier's executive duly authorized to sign on behalf of the supplier)

For and on behalf of
…… (Name and address of the supplier)
……. ……(Seal of the supplier)

Date:
Place:

(Section XVII)

Letter of Authority for attending a Bid Opening

(Refer to clause 24.2 of GIT)

The General Manager
Security Paper Mill
Hoshangabad
M.P – 461 005

Subject: Authorization for attending bid opening on _____(date) in the Tender of _____.

Following persons are hereby authorized to attend the bid opening for the tender mentioned above on behalf of _____(Bidder) in order of preference given below.

Order of Preference	**Name**	**Specimen Signatures**
I.		
II.		
Alternate Representative		
Signatures of bidder or Officer authorized to sign the bid Documents on behalf of the bidder.		

Note:

Maximum of two representatives will be permitted to attend bid opening. In cases where it is restricted to one, first preference will be allowed. Alternate representative will be permitted when regular representatives are not able to attend.

Permission for entry to the hall where bids are opened may be refused in case authorization as prescribed above is not produced.

Shipping Arrangements for Liner Cargoes

A: In Respect Of C&F Cif Turnkey/F.O.R. Contracts For Import 1.(a) SHIPMENTS FROM PORTS OF U.K. INCLUDING NORTHERN IRELAND (ALSO EIRE), FROM THE NORTH CONTINENT OF EUROPE (GERMANY, HOLLAND, BELGIUM, FRANCE, NORWAY, SWEDEN, DENKARK, FINLAND AND PORTS ON THE CONTINENTAL SEABOARD OF THE MEDITERRANEAN (I.E. FRENCH AND WESTERN ITALINA PORTS), TO PORTS IN INDIA. The Seller should arrange shipment of the goods by vessels belonging to the member Lines of the India-Pakistan-Bangladesh Conference. If the Seller finds that the space on the Conference Lines# vessels is not available for any specific shipment, he should take up with India-Pakistan-Bangladesh Conference, Conferity House, East Grinstead, Sussex (U.K.), for providing shipping space and also inform the Shipping Co-ordination Officer, Ministry of shipping & Transport, New Delhi (Cable: TRANSCHART, NEW DELHI; Telex: VAHAN ND -2312, 2448 & 3104). The Sellers should arrange shipment through the Government of India's Forwarding agents, M/ s Schenker & Co. 2000- Hamburg (Cable: SCHENKERCO HAMBURG) or obtain a certificate from them to the effect that shipment has been arranged in accordance with instructions of the Ministry of Shipping & Transport (TRANSCHART), New Delhi b) SHIPMENTS FROM ADRIATIC PORTS OF EASTERN ITALY AND YUGOSLAVIA The Seller should arrange shipment of the goods by vessels belonging to the following Indian Member lines; 1. The Shipping Corporation of India Ltd. 2. The Scandia Steam Navigation Co. Ltd. 3. Indian Steamship Co. Ltd. For the purpose of ascertaining the availability of suitable Indian vessels and granting dispensation in the event of their non-availability, the Seller should give adequate notice about the readiness of each consignment from time to time at least six weeks in advance of the required position to M/s Schemer & Co. 2000 HAMBURG (Cable:SCHENKERCO HAMBURG) and also endorse a copy thereof to the Shipping Co-ordination Officer, Ministry of Shipping & Transport, New Delhi (Cable: TRANSCHART, NEW DELHI; Telex: VAHAN ND -2312, 2448 & 3104). The Seller should arrange shipment through the Government of India's Forwarding Agents, M/s Schenker & Co., HAMBURG (Cable:SCHENKERCO HAMBURG) or obtain certificate from them to the effect that shipment has been arranged in accordance with the instructions of the Ministry of Shipping & Transport, (TRANSCHART), New Delhi (c) SHIPMENTS FROM POLAND & CZECHOSLOVAKIA (i) IMPORTS FROM POLAND Shipments under this contract would be made by the National flag lines of the two parties and vessels of third flag conference lines, in accordance with the agreement between the Govt. of the Republic of India and the Govt. of the Polish People's Republic regarding shipping co-operation dated 27.6.1960 as amended up-to-date. (ii) IMPORTS FROM CZECHOSLOVAKIA Goods under this contract would be shipped by the National flag lines of the two parties and vessels of the third flag conference lines, in accordance with the Agreement on co-operation in Shipping between India and Czechoslovakia signed on 3.11.1978 and ratified on 19.12.1979, as amended up-to-date. Shipping arrangements should be made by the Sellers in consultation with the Resident Representative of the Indian shipping Lines in Gdynia, C/o Morska Agencja W. Gdyni, Gdyni, ul, Pulaskiego 8, P.O. Box III-10 246; Gdynia (Po#and) - Telex: MAG, PL. 054301, Tel: 207621), to whom details regarding contract number, nature of cargo, quantity, port of loading/discharging, name of Government consignee, expected date of readiness of each consignment etc., should be furnished at least six weeks in advance of the required position, with a copy thereof endorsed to the Shipping Co-ordination Officer, Ministry of Shipping & Transport (Chartering Wing), New Delhi Tender Number:6000009397 Regd. Office:-16th Floor, Jawahar Vyapar Bhawan, Janpath, New Delhi-110001 Sec18.2 (Cable: TRANSCHART, NEW DELHI; Telex: VAHAN ND-2312, 2448 & 3104.). (d) SHIPMENTS FROM RUSSIA & OTHER MEMBER COUNTRIES OF C.I.S. Shipment under this contract should be made in accordance with the Agreement between the Government of the Republic of India and the Government of the Russia & other member countries of C.I.S. on Merchant Shipping, by vessels of Indo-C.I.S. Shipping Service. (e) SHIPMENT FROM JAPAN The shipment of goods should be made by Indian vessels to the maximum extent possible subject to a minimum of 50%. The Seller should arrange shipment of the goods in consultation with the Embassy of India in Japan, Tokyo, to whom details regarding contract number, nature of cargo, quantity, port of loading/ discharge, name of the Govt. consignee, expected date of readiness of each consignment etc. should be furnished at least six weeks in advance of the

required position. Note: The copies of such contracts are to be endorsed both to the Attaché (Commercial), Embassy of India in Japan, Tokyo, and the Shipping Co-ordination Officer, Ministry of Shipping & Transport, New D. (f) SHIPMENTS FROM AUSTRALIA, ALGERIA, BULGARIA, ROMANIA, EGYPT The Seller shall arrange shipment of the goods by Indian flag vessels to the maximum extent possible subject to a minimum of 50%. For the purpose of ascertaining the availability of suitable Indian vessels, the Seller shall give adequate notice of not less than six weeks about the readiness of each consignment to the Shipping Corporation of India Ltd., SHIPPING HOUSE, 245, Madame Cama Road, Bombay-400 021 (CABLE: SHIPINDIA BOMBAY) and also endorse a copy thereof to the Shipping Coordination Officer, Ministry of Shipping & Transports, New Delhi (Cable: TRANSCHART, NEW DELHI; Telex: VAHAN ND-2312, 2448 & 3. (g) SHIPMENTS FROM PAKISTAN The shipment of cargoes should be made by Indian vessels to the maximum extent possible subject to a minimum of 50%. Shipping arrangements should be made by the Sellers in consultation with M/s Mogul Line Ltd. 16- Bank Street, Fort, Bombay-400 023 (Cable: MOGUL BOMBAY; Telex011-4049 MOGUL), to whom details regarding contract number, nature of cargo, quantity, port of loading/discharging, name of Government consignee, expected date of readiness of each consignment etc. should be furnished at least six weeks in advance of the required position with a copy thereof endorsed to the Shipping Co-ordination Officer, Ministry of Shipping & Transport(Chartering Wing), New Delhi (Cable : TRANSCHART, NEW DELHI ; Telex : VAH#N ND - 2312, 2448 &) (h) SHIPMENTS FROM U.S ATLANTIC & GULF PORTS The Seller should arrange shipment of the goods by vessels belonging to the member lines of the India-Pakistan-Bangladesh-Ceylon and Burma Outward Fright Conference. If the Seller finds that the space on the Conference Lines vessels is not available for any specific shipment, he should take up with India-Pakistan-Bangladesh-Ceylon and Burma Outward Fright Conference, 19, Rector Street, New York N.Y 10006 U.S.A. for providing shipping space and also inform the Shipping Co-ordination Officer, Ministry of Shipping & Transport, New Delhi (Cable: TRANSCHART, NEW DELHI; Telex: VAH#N ND - 2312, 2448 & 3. (i) SHIPMENTS FROM ST. LAWRENCE AND EASTERN CANADIAN PORTS The Seller should arrange shipment of the goods by vessels belonging to the following shipping lines:- (1) The Shipping Corporation of India Ltd. (2) The Scindia Steam Navigation Co. Ltd. If the Seller finds that the space in vessels of these Lines is not available for any particular consignment, he should inform the Shipping Co-ordination Officer, Ministry of Shipping & Transport, New Delhi (Cable : TRANSCHART, NEW DELHI ; Telex : VAH#N ND - 2312, 2448 & 3104) immediately so that dispensation from the shipping lines Tender Number:6000009397 Regd. Office:-16th Floor, Jawahar Vyapar Bhawan, Janpath, New Delhi-110001 Sec18.3 concerned to use alternative lifting may be so. (j) SHIPMENTS FROM WEST COAST PORTS OF U.S.A., CANADA AND OTHER AREAS NOT SPECIFICALLY MENTIONED ABOVE The Seller should arrange shipment of the goods by Indian vessels to the maximum extent possible subject to a minimum of 50%. For the purpose of ascertaining the availability of suitable Indian vessel and granting dispensation in the event of their non-availability, the Seller should furnish the details regarding contract number, nature of cargo, quantity, port of loading/discharge, name of the Govt. consignee and expected date of readiness of each consignment etc. to the Shipping Coordination Officer, Ministry of Shipping & Transport, New Delhi (Cable : TRANSCHART, NEW DELHI : Telex : VA#ANND - 2312, 2448 & 3104) at least six weeks in advance of the required position. 2.0 BILLS OF LADING (i) C.I.F./C&F TURNKEY SHIPMENTS The Bills of lading should be drawn to indicate #Shipper# and#Consignee# as under:- SHIPPER: The C.I.F./C&F/TURNKEY SUPPLIERS concerned. CONSIGNEE: As per Consignee#s particulars in the contract (The name and address of the #Port Consignee# and #Ultimate Consignee# bothshould be indicated). (ii) F.O.R. SHIPMENTS The bills of Lading should be drawn to indicate #Shipper# and #Consignee# as under: - SHIPPER: The F.O.R. suppliers concerned. CONSIGNEE: Suppliers# Indian Agents on order. Note:- 1. Moreover the name of the #Purchaser# and #UltimateConsignee# should appear in thebody of the Bills of Lading as the #Notify Part# or as aremark. 2. Two non-negotiable copies of the Bills of Lading indicating the freight amount and discount, if any allowed, should be forwarded to the Shipping Co-ordination Officer, Ministry of Shipping and Transport (Chartering Wing), New Delhi after the Shipment of each consignment is affected. 3. The seller should avoid the use of over-aged vessels for the shipment of the goods under the contract and if so used, the cost of additional insurance, if any, shall be borne by the Seller. B: In Respect Of F.O.B./F.A.S Contracts For Imports 1. Shipping arrangements will be made by the Ministry of Shipping and Transport (Chartering Wing), New Delhi (Cable: TRANSCHART, NEW DELHI: Telex: VA#ANND - 2312, 2448 & 3104) through their respective Forwarding Agents/Nominees as mentioned below, to whom adequate notice

about the readiness of cargo for shipment should be given by the Sellers from time to time at least six weeks in advance of the required position for finalizing the shipping arrangements Area Forwarding Agents/Nominees (a) U.K. including Northern Ireland (also Eire) the North Continent of Europe (Germany, Holland, Belgium, France, Norway, Sweden, Finland and Denmark) and Ports on the Continental Sea Board of the Mediterranean, (i.e. French and Western Italian ports) and also Adriatic Ports. M/s Schenker Deutschland AG, Bel den Muehren 5 20457 Hamburg , Germany Telephone No. +49 40 36135-351 Fax No : +49 40 36135-509 E-mail- kay.buedinger@schenker (b) U.S.A and Canada M/s OPT, Overseas Project, Transport Inc. 46, Sellers Street, Kearny, N.J. 07032, USA Tel : 201/998-7771,Tel : 573-3586 Fax : 201/998-78 (c) Japan The First Secretary (Commercial) Tender Number:6000009397 Regd. Office:-16th Floor, Jawahar Vyapar Bhawan, Janpath, New Delhi-110001 Sec18.4 Area Forwarding Agents/Nominees Embassy of India, Tokyo, Japan, (Cable : INDEMBASSY TOKYO) Telex : INDEMBASSY J 24850, Telephone # 262 - 2391 (d) Australia, Algeria, Bulgaria, Romania, Czechoslovakia, Egypt. The Shipping Corporation of India Ltd., #Shipping House# 229/232 Madame Cama Road, Bombay - 400021 (Cable : SHIP INDIA BOMBAY) Telex : 31-2209 SCID IN Telephone: 232666, 232785. (e) Russia & other member countries of C.I.S. The Secretaries, Indo-C.I.S. Shipping Service, C/o The Shipping Corporation of India Ltd., #Shipping House# 245, Madame Cama Road, Bombay - 400021. (Cable : SHIP INDIA BOMBAY FOR SOVIND SHIP) Telex : 31-2209 SCID IN. Telephone : 23 (f) Poland The Secretaries, Indo-Polish Shipping Service, C/o The Shipping Corporation of India Ltd., #Shipping House# 245, Madame Cama Road, Bombay - 400021. (Cable : SHIP INDIA BOMBAY FOR INDOPOL) Telex : 31-2209 SCID IN Telephone : 23 (g) Pakistan The Mogul-Line Ltd., 16, Bank Street, Fort Bombay - 400023 (Cable : MOGUL BOMBAY) Telex : 011-4049 (MOGUL) Telephone : 252785 II (h) Other areas not specifically mentioned above The Shipping Co-ordination Officer, Ministry of Shipping and Transport, (Chartering Wing), New Delhi. (Cable : TRANSCHART, NEW DELHI) Telex : VAHAN ND 2312,2448 & 3104 2. BILLS OF LADING The Bills of Lading should be drawn to indicate 'Shipper' and 'Consignee' as under :- SHIPPER: The Government of India. CONSIGNEE: "As per consignee's particulars in the contract. (The name and address of the 'Port Consignee' and 'Ultimate Consignee' should both be indicated.) 3. Two non-negotiable copies of the Bills of Lading indicating the freight amount and discount, if any allowed, should be forwarded to the Shipping Co-ordination Officer, Ministry of Shipping and Transport (Chartering Wing), Parivahan Bhawan, New Delhi after the Shipment of each consignment is affected. 4. The Seller should avoid the use of over-aged vessels for the shipment of the goods under the contract and if so used, the cost of additional insurance, if any, shall be borne by the Seller.

(Section XIX)

Proforma of Bills for Payments

(Refer Clause 22.6 of GCC)

Name and Address of the Firm.....
Bill No.....Dated..... Purchase order.....No..... Dated.....

Name and address of the consignee.....

S.No	Authority for purchase	Description of Stores	Number or quantity	Rate Rs. P.	Price per Rs. P.	Amount
Total						

1. GST Amount and Rate
2. Freight (if applicable)
3. Excise Duty (if applicable)
4. Packing and Forwarding charges (if applicable)
5. Others (Please specify)
6. PVC Amount (with calculation sheet enclosed)
7. (-) deduction/Discount
8. Net amount payable (in words Rs.)
9. GSTIN No.
10. HSN/SAC Code
11. Shipping Address
12. Place of Supply
13. Billing Address

Dispatch detail RR No. /other proof of dispatch.....
Dated..... (enclosed)
Inspection Certificate No.....Dated..... (enclosed)
Modvat Certificate No ..... (enclosed)
Excise Duty Gate pass..... (enclosed)

Place:
Date:

Received Rs. ..... (Rupees).....

I hereby certify that the payment being claimed is strictly in terms of the contract and all the obligations on the part of the supplier for claiming that payment has been fulfilled as required under the contract.

Revenue stamp Signature and of Stamp Supplier

(Section XX)

PRE-BID/PRE-CONTRACT INTEGRITY PACT
(To be signed on Plain Paper)

This pre-bid pre- contract Agreement (hereinafter called the Integrity pact) is made on day of the month of 2012 at New Delhi, India.

BETWEEN

The President of India, acting through _____ Designation of the Officer, Ministry/ Department, Government of India (hereinafter called the "BUYER" which express on shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First part.

AND

M/s_____represented by Shri _____ Chief Executive Officer (hereinafter called the „BIDDER/SELLER" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

PREAMBLE

WHEREAS the BUYER proposes to procure Name of the Stores/ Equipment/ Item and the BIDDER/ SELLER is willing to offer/ has offered the stores, and WHEREAS THE BIDDER is a private company/ public company/Government undertaking/ partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a Ministry/ Department of the Government of India/ PSU performing its functions on behalf of the President of India.

NOW THEREFORE

To avoid all forms of corruption, by following a system that is fair. Transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract, to be entered into with a view to: Enabling the BUYER to obtain the desired said stores/equipment at a completive price, in conformity with the defined specifications, by avoiding the high cost and the distortionary impact of corruption on public procurement and Enabling the BIDDERS to obtain the bribing of including in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also obtain from bribing and other corrupt practices and the BUYER will commit to prevent corruption in any form by its officials by following transparent procedures. The parties hereto hereby agree to enter into this integrity Pact and agree as follows:

Commitments of the BUYER:-

1-1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract Tender Number:6000009397 Regd. Office:-16th Floor, Jawahar Vyapar Bhawan, Janpath, New Delhi-110001 Sec19.42 in exchanges for any advantage in the bidding process, bid evaluation, contracting or implantation process related to the contract.

1-2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.

1-3 All the officials of the BUYER will report to the appropriate Government Office any attempted or completed breached of the above commitments as well as any substantial suspicion of such a breach.

2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima fact found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fill, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled. Commitments of BIDDERS

3. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during and stage of its bid during any pre-contract or post contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-

3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift consideration, reward, favour, and material or immaterial benefit or other advantage, commission, fees, brokerage, or inducement to any official of the BUYER, connected directly or indirectly with the bibbing process, or any person, organization or third party related to the contract, in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

3.2 The BIDDER further undertaken that it has not given, offered or promised to give, directly or indirectly any bribe, consideration, reward, favour, any material of immaterial benefit or other advantage, commission, fees brokerage of inducement to any official of the BUYER or otherwise in procuring the Contract of for bearing to do or having done any act in relation to the obtaining of execution of the contract, or any other contract with the Government for showing or forbearing to show favour or disfavour to person in relation to the contract or any other contract with the Government.

3.3 BIDDER shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals of associates.

3.4 BIDDER shall disclose the payments to be made by them to agents/ brokers of any other intermediary, in connection with this bid/ contract.

3.5 DELETED

3.6 The BIDDER, either while presenting the bid or during pre-contract negotiations of before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details or services agreed upon for such payments.

3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation contraction and implementation of the contract.

3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activates.

3.9 The BIDDER shall not use improperly, for purpose of competition or personal gain or pass on to other, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the action mentioned above.

3.12 If the BIDDER or any employee of the BIDDER or any person action on behalf of the BIDDER either directly or Indirectly, is a relative of any of the officers of the BUYER or alternatively, it any relative of an officer of the BUYER has financial interest/ stake in the BIDDER‟s firm, the same be disclosed by the BIDDER at the time of filing of tender. The term relative for this purpose would be as

defined in Section 6 of the Companies Act. 1956. Tender Number: …….. Regd. Office:-16th Floor, Jawahar Vyapar Bhawan, Janpath, New Delhi-110001 Sec19.43

3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

4. Previous Transgression

4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER‟s exclusion form the tender process.

4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process of the contract, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit)

5.1 While submitting commercial bid, the BIDDER shall deposit an amount specified in section VI: List of Requirement, as Earnest Money in the mentioned in Clause by Section General Instructions to the Tenderers (GIT) with the BUYER.

5.2 The Earnest Money shall be valid up to a period of up to six months after the validity of this tender.

5.3 In case of the successful BIDDER a clause would also be incorporated in the Clause pertaining to Security Deposit/ Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact. The Security Deposit/ Performance Bond shall be valid for five years or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER, including warranty period whichever is later.

5.4 No interest shall be payable by the BUYER to the BIDDER on Earnest Money/ Security deposit for the period of its currency.

6. Sanctions for violations:-

6.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER shall entitle the BUYER to take all or any one of the following actions wherever required to be required to assign any reason therefore. (i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue. (ii) The Earnest Money Deposit (in pre-contract stage) and / or Security Deposit/ Performance Bond (after the contract is signed) shall stand forfeited either fully or partially as decided by the BUYER and the BUYER shall not be required to assign any reason therefore. (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER. (iv) To recover all sums already paid by the BUYER, and in case of an India BIDDER with interest thereon 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of the BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest. (v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, In order to recover the payments, already made by the BUYER, along with interest. (vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/ rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER. (vii) To debar the BIDDER from participating in future bidding processes of the Government, of India for a minimum period of five years, which may be further extended at the discretion of the BUYER. (viii) To recover all sums paid in

violation of the Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract. (ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened. Tender Number:……. Regd. Office:-16th Floor, Jawahar Vyapar Bhawan, Janpath, New Delhi-110001 Sec19.44 (x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

6.2 The BUYER will be entitled to take all or any of the actions mentioned at Para 6.1 (i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it on acting on its behalf (whether with or without the knowledge of the BIDDER) of an offence as defined in Chapter IX of the Indian penal Code, 1860 or prevention of Corruption Act, 1988 or any other stature enacted for prevention of corruption.

6.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER, However the BIDDER can approach the independent Monitor (s) appointed for the purposes of this Pact.

7. Fall Clause

7.1 The BIDDER undertakes that it has not supplied/is not supplying similar product/ systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/ Department of the Government of India of PSU and if it is found at any stage that similar product/ systems or sub-systems was supplied by the BIDDER to any other Ministry / Departmental of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

8. Independent Monitors:-

8.1 The BUYER has appointed independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission. Names and Addresses of the Monitors are listed in NIT.

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligation under this Pact.

8.3 The Monitors shall not be subject to instructions by the representative of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all documents relating to the project/procurement, including minutes of the meeting.

8.5 As soon as the Monitors notices or has reason to believe a violation this Pact, he will so inform the Authority designated by the BUYER.

8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The Bidder will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractor. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/ Subcontractor(s) with confidentiality.

8.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provide subcontractor meeting could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department / within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and should the occasion arise submit proposals for correcting problematic situations.

9. Facilitation of Investigation

In case of any allegation of violation of any provision of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction: - This Pact is subject to Indian Law. The Place of performance and jurisdiction is the seat of the BUYER.

11. Other Legal Actions:- The action stipulated in this integrity Pact are without prejudice to any other legal action that may follow line accordance with the provision of the extant law in force relating to any civil or criminal proceedings. Tender Number:…….. Regd. Office:-16th Floor, Jawahar Vyapar Bhawan, Janpath, New Delhi-110001 Sec19.45

12. Validity:-

12.1 The validity of this integrity Pact shall be from date of its signing and extend up to the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller including warranty period, whichever is later. In case BIDDER is unsuccessful, this integrity Pact shall expire after six month from the date of the signing of the contract.
12.2 Should one or several provision of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.
13. The parties hereby sign this integrity Pact at _____ on _____.

BUYER	BIDDER
(Name of the Officer) For and Behalf of the President of India Designation: Deptt. / Ministry/ PSU	(Name of the Officer) Chief Executive Officer
Witness: -	Witness:-
1. ----------	1. ----------
2. ----------	2. ----------

ANNEXURE – A

THREE BID, SINGLE STAGE (THREE PACKETS) TENDER
BIDDER'S CHECK LIST FOR SUBMISSION OF TENDER

Part I: - PRE-QUALIFICATION BID

S.No.	Tender Submission Check Points	Check before submission Tick (✔)
1	Tender Fee **(For Non MSME firm)**	
2	Earnest Money Deposited **(For Non MSME firm)**	
	MSME Certificate **(For MSME firm)**	
3	Tender Document duly Seal & Signed (Without mentioning any price)	
4	Term of Delivery :- FOR, SPM Hoshangabad , duly unloaded	
5	Tender Validity **165 days** as per the tender	
6	Submit Manufacturer's Authorization form **(If Applicable)**	
7	Accept the Warranty clause as per tender **(If Applicable)**	
8	Submit the documents as per Qualification / Eligibility criteria – Section IX 1) Copy of Purchase orders as per eligibility criteria last five financial years for point no. 1 & 2. 2) Financial statements for last three years(Balance sheet and Profit & Loss statement) certified by CA.	
9	Fill Tender Form – Section X duly seal & sign (Without mentioning price)	
10	Integrity Pact duly Seal & Signed Section XX	

Part II : - TECHNO-COMMERCIAL BID

S.No.	Tender Submission Check Points	Check before submission Tick (✔)
1	Technical Specification –Section VII as per tender	
2	Blank Price Bid as per Section XI (Without Price but mention the taxes & other charges)	
3	No deviation certificate **(Applicable)**	
4	Acceptance of all sections of tender document **(Applicable)**	

Part III : - PRICE BID

S.No.	Tender Submission Check Points	Check before submission Tick (✔)
1	Price Bid as per Section XI (Price including all taxes & other charges)	

…….
(Bidder's Seal & Sign)