

Tripura State Council for Science & Technology

Vigyan Bhawan, 1st Floor, Pt. Nehru Complex
Gorkhabasti, Agartala- 799006
Ph: 913812301365 email:stcouncil.trp@gmail.com

F.NO.8(39)/TSCST/2427-33

Dated, Agartala, November 16, 2012

Abridged Notice Inviting Tender

The Tripura State Council for Science & Technology invites notice inviting tender vide F.NO.8(39)/TSCST/ dated, November....., 2012 for Consultancy, Supplying, Installing, Testing, Commissioning & Maintenance of following 20 water processing plant with Design & Construction of the base structure including underground source of water (if not available) at 20 schools of Tripura.

Sl. No.	Item	Capacity	Quantity
1	Ultra Filtration	600 litres/hours	9
2	Ultra Violate	600 litres/hours	9
3	Reverse Osmosis	600 litres/hours	2
4	Field Water Testing Kit with all Chemicals & Accessories	Chemicals & Accessories to be provided for testing water samples for 25 times/ per school	20
4	Provision of Solar power	1 kw	3

The last date & Time of receipt of notice inviting tender is December 12,, 2012.

Comprehensive tender document containing detailed terms & conditions and scope of the work including earnest money/security money etc. to be deposited can be collected by interested individual/company on any working day during office hours on or before December 5, 2012 from the Tripura State Council for Science & Technology, 1st Floor, Vigyan Bhawan, Gorkhabasti, Agartala. The information can also be downloaded from the website "www.tscst.nic.in".

Sd/-
(M. L. Roy)
Member Deputy Secretary

Tripura State Council for Science & Technology

Pt. Nehru Complex, 1st Floor, Vigyan Bhawan

Gorkhabasti, Agartala, Ph:2301365

Tender Document

Tripura State Council for Science & Technology invites sealed Technical & Commercial Bids for Consultancy, Supplying, Installing, Testing, Commissioning & Maintenance of following 20 water processing plant with Design & Construction of the base structure including underground source of water (if not available) at 20 schools of Tripura.

Sl. No.	Item	Capacity	Quantity
1	Ultra Filtration	600 litres/hours	9
2	Ultra Violate	600 litres/hours	9
3	Reverse Osmosis	600 litres/hours	2
4	Field Water Testing Kit with all Chemicals & Accessories	Chemicals & Accessories to be provided for testing water samples for 25 times/ per school	20
4	Provision of Solar power	1 kw	3

Interested and eligible Bidders are required to submit the Technical and Commercial Bids in two separate sealed envelopes. The Technical and Commercial Bids should be accompanied by a bid security as specified in this Bid Document. The Bid Security (In the form of Demand Draft) should be included in the same envelope containing the Technical Bid. The Technical and Commercial Bids along with the Bid Security must be delivered to the Office of the Member Deputy Secretary, Tripura State Council for Science & Technology, Pt. Nehru Complex, 1st Floor, Vigyan Bhawan, Gorkhabasti, Agartala, on or before *December 12, 2012 up to 03:00 P.M.*

Comprehensive tender document containing detailed terms & conditions and scope of the work can be collected *on any working day (10.00 am to 5.00 pm) from November 18 to December 5, 2012*, from the Tripura State Council for Science & Technology, 1st Floor, Vigyan Bhawan, Gorkhabasti, Agartala or same can be downloaded from the website "www.tripura.nic.in".

The summary of various activities with regard to this invitation of bids are listed in the table below:

1	Bid Reference No.	F.NO.8(39)/TSCST/ Dated, Agartala, November....., 2012
3	Date of commencement of distribution of Tender Documents	November 18, 2012
5	Last date & Time for submission of Bids	December 12, 2012 at 3.00 pm
6	Date & Time of opening of bids (Technical)	December 12, 2012 at 4.00 pm
7	Date and Time of opening of bids (commercial)	To be announced latter
8	Venue of technical and commercial bid opening	Tripura State Council for Science & Technology, Pt. Nehru Complex, 1 st Floor, Vigyan Bhawan, Gorkhabasti, Agartala
9	Address for communication, Place of issue of bids and submission of bids	Sri Supriya Majumder, Scientist/Engineer-B, Mob: 9436128829, Tripura State Council for Science & Technology, Pt. Nehru Complex, 1 st Floor, Vigyan Bhawan, Gorkhabasti, Agartala Tender document can also be downloaded from: www.tscst.nic.in

The bids would be opened in presence of the authorized representatives of prospective bidders. If the submission and opening day is declared as holiday, the bids can be submitted on next working day upto 3:00 p.m. and will be opened at 4:00 p.m. on the same day.

The Tripura State Council for Science & Technology reserves the rights to reject any bid or all the bids without assigning any reasons and revising quantity, fine-tuning specifications as per requirement of Government of Tripura before opening the commercial bids.

For more details Please log on www.tripura.nic.in

Sd/-
(M. L. Roy)
Member Deputy Secretary

INVITATION OF BID

Section-II

i. Scope of Work

Introduction

The scope of the project is to setting up of 20 numbers of water processing plants at 20 schools of Tripura (list of the schools are at Annexure-V)

1. The Scope of Work shall include Consultancy, Supply, Installation, Testing, Commissioning and Maintenance of following types of water processing plant

Sl. No.	Item	Capacity	Quantity	Technical Specification
1	Ultra Filtration with all the accessories i.e. multiple tapes & sufficient storage tanks for raw water & purified water and necessary pump for water lifting to be instrumented with flow meter and energy meter & other associated pipe fittings & electrical wiring	600 litres/hours	9	ANNEXURE-I
2	Ultra Violate with all the accessories i.e. multiple tapes & sufficient storage tanks for raw water & purified water and necessary pump for water lifting to be instrumented with flow meter and energy meter & other associated pipe fittings & electrical wiring	600 litres/hours	9	ANNEXURE-II
3	Reverse Osmosis with all the accessories i.e. multiple tapes & sufficient storage tanks for raw water & purified water and necessary pump for water lifting to be instrumented with flow meter	600 litres/hours	2	ANNEXURE-III

	and energy meter & other associated pipe fittings & electrical wiring			
4	Field Water Testing Kit with all Chemicals & Accessories	Chemicals & Accessories to be provided for testing water samples for 25 times/ per school	20	ANNEXURE-IV
4	Provision of Solar power for 3 units where conventional power is not available with electrical wiring	1 kw	3	

2. The scope of the work shall also include complete design and installation of water purification system from sourcing to purification of raw water and construction of required base structure with underground source of water (if not available) for installation of the particular water processing plant mentioned above with raw water and treated water storage tank.
3. The entire job of Consultancy, Supply, Installation, Testing, Commissioning and Maintenance of the systems shall be vendor's responsibility.
4. Additional equipment may be installed (if required) for purification of excess IRON with the water purification system in places where Iron content is more (2-5).
5. Scope of the work also includes:
 - i. Supply of equipments to the sites
 - ii. Supply of pump with required power with arrangement of electric connection, regeneration chemicals for one and half years and commissioning.
 - iii. Lubricants, oil and Greece as and when required.
 - iv. Raw water and Treated water storage tank.
 - v. All equipments, works and services not specifically mentioned in our proposal.

- vi. One and half years free service with Lodging, Boarding and Travelling charges

Training

1. The scope of work envisages that the bidder shall under take to train the staff nominated by Tripura State Council for Science & Technology in deferent aspects of system design, functioning, testing, commissioning, system management, operation & administration, maintenance.
2. The supplier shall at every stage of installation, testing and commissioning, provide all facility for adequate training of personnel who may be deputed to work on the project.

Maintenance

Guarantee

1. The supplier shall ensure the availability of service including maintenance of the system and any other related accessories/services.
2. The Supplier shall provide comprehensive on-site **Guarantee** for all machines supplied under the contract at least for a period of **one and half years from the date of final acceptance of the system.**
3. The maintenance services, including spares shall be **free of cost** during the guarantee period.
4. During the term of Guarantee, the service/repair calls will have to be attended by the Supplier **within twenty four hours** from the time of such calls. The defective equipments should be repaired the same day at site. In case of major defects requiring the defective accessories to be taken to the Supplier's workshop, it should be returned within *four* weeks duly repaired and immediate substitute accessories will be provided by the Supplier for the smooth operation of the System. The to and fro transportation of the accessories will be the responsibility of Supplier.
5. Apart from the service/repair calls, the service engineer deputed by the Supplier will visit the site at least once every two month to assess the serviceability of the System.

Section-III

Terms & conditions

1. Tripura State Council for Science & Technology is looking for vendors for supplying, installing, testing, commissioning & maintenance of 20 Water Processing Plant for which componentise details have given as above.

2. Tenderers are advised to study all technical and commercial aspects, instructions, forms, terms and specifications carefully in the tender document. Failure to furnish all information required in the Tender Document or submission of a bid not substantially responsive to the Tender document in every respect will be at the tenderer's risk and may result in the rejection of the bid. **It will be imperative on each bidder to fully acquaint himself with all the local conditions and factors, which would have any effect on the performance of the contract.**

3. Sealed offers prepared in accordance with the procedure enumerated in tender document should be submitted to **Member Deputy Secretary, Tripura State Council for Science & Technology**, not later than the date and time laid down, at the address given in the schedule for invitation to Tender of Section I.

4. All bids must be accompanied by a Earnest Money Deposit (EMD) of **Rs. 40,000.00 (Forty Thousand only)** in the form of Bank Draft Valid for period of 06 months drawn from a scheduled bank in favour of **Tripura State Council for Science & Technology, payable at Agartala**. Tenders not accompanied by earnest Money or incomplete in any respect will be rejected outright.

5. This tender document is not transferable.

6. The categories of items and quantity will be as per requirements. **Member Deputy Secretary, Tripura State Council for Science & Technology** reserves the right to increase or decrease the quantity or delete some or all of the items depending on the needs of the Member Deputy Secretary without assigning any reasons.

7. The tender should be submitted in Two cover system i.e a: **Technical Bid** and b: **Price Bid**. There should be proper indication of the contents on each envelope.

8. Both the Technical Bid and Commercial Bid should then be put in a single outer cover
9. The tenderer should clearly indicate the availability of service and maintenance facilities at Agartala
10. **The tenderers are required to quote for each item separately in terms of unit price including all applicable taxes, installation charges, maintenance for one and half years, training and services. Prices should be quoted in Indian currency only.**
11. The **Tripura State Council for Science & Technology** reserves the right to reject any or all tenders without assigning any reason whatsoever.
12. The tenders will be opened on the date and time indicated in the presence of tenderers if any present on the occasion. If the date of opening is declared to be a holiday the tenders will be opened on the next working day.
13. No advance payment or payment against Performa invoice will be made. Payment will be made after receipt, inspection, installation/ testing and components etc.
14. All damaged or unapproved goods shall be returned at the Tenderer risk and cost and the incidental expenditure thereupon shall be recovered from the concerned party.
15. On acceptance of tender, the date of delivery should be strictly adhered to otherwise, **Tripura State Council for Science & Technology** reserves the right not to accept the delivery in full or in part. In case the order is not executed within the stipulated period, **Tripura State Council for Science & Technology** will be at liberty to make purchases through other sources, and to forfeit the earnest money of the Tenderer.
16. The vendor must have repairing facilities for the equipments under offer & a group of trained engineers & technicians to handle breakdowns at the site on call.
17. Payment of bill will be made through crossed account payee Cheque /Bank Draft.
18. The installation and commissioning shall not be deemed to have been completed unless all the systems are accepted by the purchaser.

Section –IV

Eligibility Criteria

The bidding is open to all qualified bidder who fully meet the following qualifying requirements:-

- Only original equipment manufacturing company can apply for tender. The company / firm should have more than 10 years of experience of manufacturing of water purification systems.

Dealers/franchise/traders are not eligible for tendering. Joint ventures are not allowed.

- Tenderer should have ISO 18001, 14001 & 9001.
- Company /firm should turnover of Rs. 50 Crore in last financial year.
- Company / firm should *previous experience for supply & installation of RO plants for drinking water solution atleast three states.*

Performance certificate of officer not below the rank of Executive Engg. is required for the same.

- As par government policy, SSI unit will be given preference.
- As the success of project depends on installation and operation of units rather than low cost / supply capacity hence company having better service network will be preferred.
- Bidder's should have an authorized representative in the state head & the proof of the same along with name, contact no. & proper address should be submitted along with technical bid.
- The bidder should also enclose income tax clearance certificate along with pan card.
- Bidders should not be under a declaration of ineligibility for corrupt and fraudulent practices. A self-declaration certificate should be enclosed

SECTION – V

Instructions to the Bidders

1. Cost of Bidding

The Bidder shall bear all the costs associated with the preparation and submission of its bid, and the Tendering Authority in no case, will be responsible or liable for these costs, regardless of conduct or outcome of the bidding process.

2. Bidding Document

The Bidder is expected to examine all instructions, forms, terms and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of the bid.

3. Clarification of Bidding Documents

A prospective Bidder requiring any clarification of the bidding documents may notify the Tendering Authority in writing at the Tendering Authorities address indicated in the Invitation for Bids. The Tendering Authority will respond in writing to any request for the clarification of any bidding documents, which it receives one day prior to deadline for submission of bids prescribed by the Tendering Authority.`

4. Amendment of Bidding Documents

a. At any time prior to the deadline for submission of bids, the Tendering Authority may, for any reason, whether on its own initiative or in response to the clarification requested by a prospective Bidder, modify, change, incorporate or delete certain conditions in the bidding document.

c. In order to allow prospective Bidders reasonable time to take into consideration the amendments while preparing their bids the Tendering Authority, at its discretion, may extend the deadline for the submission of bids.

5. Preparation of Bids

a. Language of Bid

The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Tendering Authority, shall be in **English only**.

b. Bid Currency

Prices shall be quoted in Indian Rupees only.

6. Documents Establishing Bidder's Eligibility and Conformity

The Bidder shall furnish, as part of its bid, all the documents establishing the eligibility as mentioned in the Section-IV

7. Earnest Money Deposit

a. The Bidder shall furnish, as part of its bid, an Earnest Money Deposit (EMD **in the form of Demand Draft in favour of Tripura State Council for Science & Technology, payable at Agartala**, for an amount of **Rs 40,000.00 (Forty Thousand only)**).

b. The EMD shall be in Indian Rupees only.

8. Contents of Envelopes

a. It will be a two envelope bid comprising of technical bid and commercial bid.

b. **First envelope** shall be marked as Envelope No. 1 Technical Envelope and shall contain:

- Demand Draft for Earnest Money Deposit (EMD)

- The documents establishing Bidder's eligibility, qualifications and conformity mentioned Tender Document.

c. **Second envelope** shall be marked as envelope No.2 "Commercial Envelope" which will contain only price schedule

- d. The Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. The person or persons signing the bid shall initial all pages of the bid
- e. Any interlineations, erasures or overwriting shall be valid only if they are signed by the person(s) signing the bid. The bid will be summarily rejected if all the documents mentioned above are not enclosed in technical bid.

9. Submission Of Bids

a. Sealing and Marking of Bids

- ii. The Bidders shall seal the envelope No.1 Technical envelope and envelope No.2 Commercial envelope in separate inner envelopes, duly marking the envelopes as “envelope No.1, Technical Envelope” and “envelope No.2 Commercial Envelope”. He shall then place these two envelopes in an outer envelope. Both the inner envelopes and the outer envelope should be addressed to:

Member Deputy Secretary, Tripura State Council for Science & Technology, Pt. Nehru Complex, 1st Floor, Vigyan Bhawan, Gorkhabasti, Agartala

- iii. The inner and outer envelopes shall bear the words: **“Invitation of Bids for Supply and Installation of Water Processing Plants at 20 Schools of Tripura”**
- iv. Both the inner envelopes shall indicate the name and address of the Bidder.
- v. If the outer envelope is not sealed and marked, the Tendering Authority will assume no responsibility for the Bid’s misplacement or premature opening.
- vi. Telefax, cable or facsimile bids will be rejected.

b. Deadline for Submission of Bids

- i. Bids must be received by The Tendering Authority at the address, not later than the time and date specified in the **Invitation for Bids (Section-I)**

- ii. In the event of the specified date for the submission of Bids being declared as a holiday for the Tendering Authority, the bids will be received up to the appointed time on the next working day.
- iii. The Tendering Authority may, at its discretion, extend this deadline for submission of bids by amending the bid documents, in which case all rights and obligations of The Tendering Authority and Bidders subject to the deadline will thereafter be subject to the deadline as extended.

c. Late Bids

Any bid received by the Tendering Authority after the deadline for submission of bids prescribed by the Tendering Authority, will be rejected and/or returned unopened to the Bidder.

10. Bid Opening And Evaluation Of Bids

- a. After opening of the technical bids, those bidders, who are technically eligible (i.e. who satisfy the eligibility criteria) and have submitted all the documents mentioned above, the financial bids of the technically qualified bidders will be opened. The date of this meeting shall be announced after the technical bid opening.
- b. The Bidder's representative who is present shall sign an attendance. In the event of the specified date of bid opening being declared holiday for the tendering authority, the bid shall be opened at the appointed time and location on the next working day.
- c. The Bidder's name, bid modifications or withdrawals, bid prices and presence or the absence of requisite bid security and such other details as, the Tendering Authority at his discretion, may consider appropriate, will be announced at the time of opening. No bid shall be rejected at the openings except for the late bids, which shall be returned unopened to the Bidders.
- d. Bids that are not opened and read out at bid opening shall not be considered for further evaluation, irrespective of the circumstances. Withdrawn bids will be returned unopened to the Bidders.
- e. Bids will be opened In the presence of Tender Committee Members whoever are present as well as Bidders or their representatives who chose to attend on the specified date and time.

11. Clarification of Bids

During evaluation of bids, Tendering Authority may at its discretion, ask the Bidder for clarification of its bid. The request for clarification and response shall be in writing.

12. Award of Work

- a. The finalization of the tenders will be done by a committee constituted by the Tendering Authority for this purpose.
- b. The Tendering Authority will award the work to the Successful bidders whose bid has been determined as the lowest evaluated bid provided further that the bidder is technically qualified.
- c. The Tendering Authority's may vary scope of contract at the time of award.

13. Tendering Authority's Right to Accept / Reject Any or All Bids

The Tendering Authority reserves the right to accept or reject any bid, or to annul the bidding process and reject all bids at any time prior to the award of Contracts, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Tendering Authority's action.

14. Interpretation of the clauses in the Tender Document / Contract Document

In case of any ambiguity in the interpretation of any of the clauses in Tender Document or the Contract Document, the Tendering Authority's interpretation of the clauses shall be final and binding on all parties.

15. Decision Taken

The decision taken by the Tender Committee in the process of Tender evaluation will be full and final.

16. Security deposit

- i. The successful Bidder will be required to remit Security Deposit equivalent to 10% of the total accepted Tender value within ten days from the date of intimation in the form of

irrevocable Bank Guarantee valid for the contract period or D.D. If the accepted Bidder fails to remit the Security Deposit, the Earnest Money Deposit remitted by him will be forfeited by TSCST and his bid will be held void. Agreement will be signed only on fulfillment of the above condition by the successful Bidder.

- ii. The Security Deposit furnished by the successful Bidder in respect of his Tender will be returned to him at the end of the contract period subject to the satisfaction of Tripura State Council for Science & Technology.
- iii. In case of successful Bidder, the Earnest Money Deposit may be adjusted towards Security Deposit payable by him.
- iv. If the successful Bidder fails to sign the contract or after signing the contract fails to perform any contractual obligation, his Security Deposit mentioned above will be forfeited by TSCST.

17. Payment

- i. 80% of the total payment shall be made after successful completion of the Design & Construction of the Base structure, supply, installation and training at all the 20 school (on production of job completion certificate from the Head of the concerned Schools).
- ii. 10% of the total payment shall be made after successful completion of 12 months, however the same can be released after the delivery, installation and training at all the 3 (three) institutes against the bank guarantee of the same amount from any nationalized bank.
- iii. 10% of the total payment shall be made after successful completion of 18 months of contract period.

18. Implementation schedule

Commission of training after installation, testing and commissioning of Computer System and accessories etc. shall be done within 90 days from the date of signing of Contract.

The bidders should give a step wise implementation schedule with the Technical Bid. Any deviation in the implementation schedule shall make the tender liable for rejection.

19. Assigning of tender in whole or part

The bidder shall not assign or make over the contract, the benefit or burden thereof to any other person or persons or body corporate. No under letting or subletting to any persons or body corporate for the execution of the contract or any other part thereof is permitted, without the written consent of TSCST.

20. Penalty and termination due to non-fulfillment of contract

- i. The final acceptance of the tender would be entirely vested with TSCST who reserves the right to accept or reject any tender, without assigning any reason whatsoever. There is no obligation on the part of TSCST to communicate in any way with the rejected Bidders. After acceptance of the tender by TSCST, the Bidder shall have no right to withdraw his tender or claim higher price.
- ii. Tenders with incomplete information are liable for rejection.
- iii. For each category of pre-qualification criteria, the documentary evidence is to be produced dully attested by the bidder, serially numbered and enclosed with the technical bids. If the documentary proof is not enclosed for any/ all criteria, the tender is liable for rejection.
- iv. If any information given by the bidder is found to be false/ fictitious, the bidder will be debarred for 3 years from participating any TSCST tenders.

TECHNICAL SPECIFICATION

U.F 1800 LPD (600 LPH)

Sr. No.	Description	Specifications
1.	Body.....	MS POWDER COTTED
2.	Feed Pump/Make.....	1800 LPD (600 LPH)/Kirloshkar Crompton CRI
3.	Pre Filter.....	10" x Sediment filter
4.	Pre Filter.....	10" Pre Carbon Filter
5.	U.F.Membrane.....	1 Nos.
6.	Rating flow.....	1800 LPD (600 LPH)
7.	Flow Indicator.....	1 Nos.
8.	Tank stands.....	1 Nos.
9.	Tank 2000Ltr.....	1 Nos.
10.	Tap	6 Nos.
11.	Pipe line.....	CPVC + DUPLONE

SCHEDULE OF INCLUSIONS

1. Supply, Installation and commission of equipments at the different locations of Tripura as mentioned in Annexure-V
2. All Civil Works such as plant foundation of the equipments, mass concreting etc.
3. Supply of power to Motors, regeneration chemicals for trial run and commissioning.
4. Lubricants, oil and Greece as and when required.
5. Raw water and treated water storage tank.
6. All equipments, works and services not specifically mentioned in our proposal.
7. Following items are also under inclusion

No	Items	Scope
1	Control & Power supply	Three phase for high pressure pump and all instrumentation
2	Service Water	Flow rate for 600 LPH at inlet of RWP
4	Labor	As and when required
5	Chemicals	Special Anti Scaling Chemical

Terms & Conditions:

1. **Warranty:** One and half year on site. Consumable items like all pre filters will be covered in warranty. Membrane cost will be worked out on 1 and half year pro-rata basis. All other parts replacement against manufacturing defect.
2. **Service:** Quoted price to be inclusive of supply, installation and commissioning and One and half year free service with Lodging, Boarding and Traveling charges of the service engineer.

TECHNICAL SPECIFICATION Filtration with U.V. 1600 LPD (600 LPH)

Sr. No.	Description	Specifications
1.	Body.....	MS POWDER COTTED
2.	Feed Pump/Make.....	1800 LPD (600 LPH)/Kirloshkar Crompton CRI
3.	Pre Filter.....	10" x 20" Micron P.P / Pleated filter U.S.A
4.	Pre Filter.....	10" x 5" Micron P.P / Pleated filter U.S.A
5.	Ultra Violet/make	Light Source / Philips.
	• Lamp Size.....	8 Inch
	• Lamp Quartz.....	Glass
	• UV. Housing MOC.....	SS
	• Lamp Volt.....	11 W
6.	Rating flow.....	1600 LPD (600 LPH)
7.	Flow Indicator.....	1 Nos.
8.	Tank stands.....	1 Nos.
9.	Tank 2000Ltr.....	1 Nos.
10.	Tap	6 Nos.
11.	Pipe line.....	CPVC + DUPLONE

SCHEDULE OF INCLUSIONS

1. Supply, Installation and commission of equipments at the different locations of Tripura as mentioned in Annexure-V
 1. All Civil Works such as plant foundation of the equipments, mass concreting etc.
 2. Supply of power to Motors, regeneration chemicals for trial run and commissioning.
 3. Lubricants, oil and Greece as and when required.
 4. Raw water storage tank.
 5. All equipments, works and services not specifically mentioned in our proposal.
 6. Following items are also under inclusion

No	Items	Scope
1	Control & Power supply	Three phase for high pressure pump and all instrumentation
2	Service Water	Flow rate for 600 LPH at inlet of RWP
4	Labor	As and when required
5	Chemicals	Special Anti Scaling Chemical

Terms & Conditions:

1. **Warranty:** One and half year on site. Consumable items like all pre filters will be covered in warranty. Membrane cost will be worked out on 1 and half year pro-rata basis. All other parts replacement against manufacturing defect.
2. **Service:** Quoted price to be inclusive of supply, installation and commissioning and One and half year free service with Lodging, Boarding and Traveling charges of the service engineer.

TECHNICAL SPECIFICATION RO 600 MS

1	Skid	
	MOC	MS
	No.	1
	Make	HI-TECH
	Capacity	RO 600 Liter.
	Type	Rectangle
2	Feed Pump	
	Type	Self Priming
	No.	1
	Make	Crompton / Kirlosker
	Capacity	1500 LPH
	Pressure	3.5 KG/ CM²
	Power Consumption	1 HP
3	Sand Filter	
	Type	Vertical
	Diameter	12 Inch
	Height	48 Inch
	MOC	FRP
	Type of Operation	Manual
	Back wash Time	10-15 minutes
	Size of multi port valve	¾ "
4	Activated Carbon Filter	
	Diameter	12 Inch
	Length of filter	48 Inch
	MOC	FRP
	Type of Operation	Manual
	Back wash Time	10-15 minutes
	Size of multi port valve	¾ "
5	Anti Scaling dosing system	
	Pump	1 Set
	Make	Aqua Italy / E-Dose / Hi-tech
	Quantity	1
	Type	Electronic Diaphragm Type
	Capacity	0 to 4 LPH
	Quantity of Tank	1 Nos.
	Capacity of Tank	40 Liters
	MOC of Tank	HDPE.
6	Cartridge Filter Housing	
	Flow rate	1.5 M³/hr.
	MOC	FRP

	Length of Housing	20"
	Dia. Of Housing	4"
	No. of Cartridge Housing	2 Nos.
7	Micron Cartridge Filter	
	Flow rate	1.5 M ³ /hr.
	MOC	PP
	Length of Cartridge	20"
	Dia. Of cartridge	4"
	No. of Cartridge	2 Nos.
	Rating	20 Micron (1 nos) + 5 Micron (1 nos).
	Make	"Purtrex", Osmonics, USA.
8	Pressure Pump	
	Type	Vertical centrifugal multi stage
	No.	1
	Make	Grundfos
	Power consumption	3 HP
	Flow	1.2 M ³
	Pressure	10-12 Kg/CM ²
9	Pressure Tube	
	Item	RO module consisting of membrane Housing With RO membrane mounted on skid.
	MOC	FRP
	Dia.	4"
	Length	42"
	Qty.	1 Nos.
10	Membrane	
	Type	TFC POLYAMIDE
	Size	4" dia. x 40" BW 30-40x40
	Qty.	2 Nos.
	Make	Desal@ Osmonics , USA
	Rating	0.0001 Micron.

INSTRUMENTATION:

A	Digital Conductivity OR TDS Meter	
	Quantity	1 Nos.
	Maximum Temperature	40 Degree Centigrade
	Location	RO Permeate.
B	Flow Indicators	
	Quantity	2 Nos.
	Type	Float Type Panel Mounted.
	Maximum Op. Temp.	40 Degree Centigrade.
	Measuring Points	RO Module Product Flow
C	Pressure Gauges	
	Quantity	4 Nos.
	Range	0-20 Kg / Cm ² .
	Location	1) RO Module Inlet.

		2) RO Module Reject Flow.
D	High Pressure Switch And Low Pressure Switch	
	Quantity	1+1 Nos.
	Location	Before & After High Pressure Pump.
E	Pressure Control Valve	
	Location	Reject Water Line
	Nos.	1 Nos.
	Make	Spring System.
F	Storage Tank	
	Location	Storage Water
	Capacity	2000 Liter
	Type	HDPE
	Make	Sintex
F	Auto Flushing switch with Solenoid Valve.	
G	Electronic Control Panel With A meter, Voltmeter, indicators, On off Switch	

PIPE LINE

- CPVC pipe line from Feed Pump to Inlet of High Pressure Pump.
- SS pipe line from outlet of High Pressure pump to final water end point of system.

SKID

- MS box pipe frame.

SCOPE OF SUPPLY FOR RO SYSTEM

Sr. No	Components	Quantity
1	Raw Water Pump	1 Nos.
2	Pressure Sand Filter # FRP Pressure Vessel # Multi Port Valve # Initial Charge of Media. # Frontal PVC pipe work with necessary fittings	1 Set.
3	Activated Carbon Filter # FRP Filter Housing # Carbon Block # Frontal PVC pipe work with necessary fittings	1 Set.

4	Anti Scaling Dosing System # Dosing Pump. # Dosing Tank (PVC)	1 Set.
5	Micron Cartridge Filter (20 Micron) # Cartridge Filter Housing	1 Set.
6	Micron Cartridge Filter (5 Micron) # Cartridge Filter Housing	1 Set.
7	High Pressure Pump # Electric Motor. # Pump MOC : SS	1 Set.
8	Reverse Osmosis Module # RO Membrane (Desal® / Filmtec® USA) # RO Pressure Tube (SS 316)	1 Set.
9	PLC based Control Panel with Instruments	1 Set

SCHEDULE OF INCLUSIONS

1. Supply, Installation and commission of equipments at the different locations of Tripura as mentioned in Annexure-V
2. All Civil Works such as plant foundation of the equipments, mass concreting etc.
3. Supply of power to Motors, regeneration chemicals for trial run and commissioning.
4. Lubricants, oil and Greece as and when required.
5. Raw water and treated water storage tank.
6. All equipments, works and services not specifically mentioned in our proposal.
7. Following items are also under inclusion

No	Items	Scope
1	Control & Power supply	Three phase for high pressure pump and all instrumentation
2	Service Water	Flow rate for 600 LPH at inlet of RWP
4	Labor	As and when required
5	Chemicals	Special Anti Scaling Chemical

Terms & Conditions:

1. **Warranty:** One and half year on site. Consumable items like all pre filters will be covered in warranty. Membrane cost will be worked out on 1 and half year pro-rata basis. All other parts replacement against manufacturing defect.
2. **Service:** Quoted price to be inclusive of supply, installation and commissioning and One and half year free service with Lodging, Boarding and Traveling charges of the service engineer.

Field testing kit should contain sufficient equipments, materials, chemicals etc. to test the following parameters during the project period of one and half years

A. Essential Physical Parameters to be tested (on daily basis)

1. Turbidity (NTU)
2. pH value (paper)
3. Odour (Acceptable/not acceptable)
4. Colour (Hazen Units)
5. Taste
6. Total Dissolved Solids (mg/lit)
(Hand held meter)

B. Essential Chemical Parameters to be tested (on weekly basis)

1. Iron (ppm)
2. Total Hardness (mg/lit)

C. Essential Bacteriological Parameters to be tested (on weekly basis)

1. E coli or Thermo tolerant bacteria (MPN/100ml)
2. Total Coli form Bacteria (MPN/100ml)

List of Schools

Sl. No.	Name of School	Block	District	Availability of Grid Power Location
1.	Ambedkar Adarsha Uchcha Bidyalaya	Bishalgarh	West	Available
2.	Sonapur Senior Madrassa	Melaghar	West	Available
3.	Rangachara SB	Mohanpur	West	Available
4.	Naitalim SB	Teliamura	West	Available
5.	Khowai Tea Garden SB	Khowai	West	Available
6.	No.-1 Chhaigharia SB	Matabari	South	Available
7.	Dalakbari SB	Amarpur	South	Available
8.	New Manu Girls' Colony SB	Satchand	South	Available
9.	Purba Pilak SB	Bokafa	South	Available
10.	Amzad Nagar SB	Hrishyamukh	South	Available
11.	Tilla Bazar HS	Gournagar	North	Available
12.	Railway Colony SB	Kumarghat	North	Available
13.	Kurti Sonapur Madrassa	Kadamtala	North	Available
14.	Tekni SB	Panisagar	North	Available
15.	Laxmipur SB	Dasda	North	Available
16.	Marachara SB	Salema	Dahalai	Available
17.	Kulai SB	Ambassa	Dahalai	Available
18.	West Masli SB	Manu	Dahalai	Available
19.	Hezachara SB	Chhawmanu	Dahalai	Available
20.	Durbajoy SB	Dumburnagar	Dahalai	Available