



## **CHENNAI METROPOLITAN WATER SUPPLY & SEWERAGE BOARD**

**TENDER NO: CMWSSB/CNT/WSS/ICB/JICA/DESAL/CP01/018/2020-21**

**LOAN AGREEMENT NO. ID-P267  
JICA FUNDED PROJECT**

**REQUEST FOR PROPOSAL DOCUMENT**

**FOR**

**PROJECT FOR CONSTRUCTION OF CHENNAI  
SEAWATER DESALINATION PLANT (I)  
PART-IV  
(PRICE SCHEDULE)**

**PROCUREMENT OF DESIGN/ENGINEERING, CONSTRUCTION, COMMISSIONING OF 400 MLD  
SEAWATER REVERSE OSMOSIS (SWRO) DESALINATION PLANT AT PERUR, CHENNAI WITH 20  
YEARS OF OPERATION AND MAINTENANCE (DBO BASIS)**

**INTERNATIONAL COMPETITIVE BIDDING**

**PROJECT MANAGEMENT CONSULTANTS**

SMEC International Pty Ltd.  
NJS Engineers India Pvt. Ltd.  
Tata Consulting Engineers Ltd.  
SMEC India Pvt. Ltd.

**SUPERINTENDING ENGINEER  
(CONTRACTS & MONITORING)  
CHENNAI METROPOLITAN  
WATER SUPPLY & SEWERAGE  
BOARD**

**Date of Issue of Request for Proposal: xx/xx/xx**

**PREAMBLE TO PRICE SCHEDULES**

1. The Pricing Document shall be read in conjunction with Notice of Invitation to Tender (NIT), Instructions to Bidders and all Tender Documents, Specifications and Drawings as listed in Sub-Clause 6.1 of Instructions to Bidders.
2. The Contract is a lump sum priced Contract, adjusted by the Price Variation Formula detailed in Clause 13 of Particular Condition of Contract, Part 3. The Works are divided into Price Schedules each representing one or more groups of inter-related works forming part of the Works. These price schedules shall cover the full compensation of the Contractor to design, construct, manufacture, supply, install, erect, prepare the project documents, commission, perform the tests on completion, defect liability, operate and maintain during the operating period etc. all scopes of works in strict conformity with the Contract documents.
3. The individual item descriptions within each Price Schedules are indicative only of the Works included in this Contract and shall not be taken as defining the scope of work to be executed either under the Price Schedules or the Contract.
4. The item descriptions, if given, are general summaries only, therefore no omission from, or error in, item descriptions within this Pricing Document shall warrant an adjustment of the Contract Price nor entitle the Contractor to seek an extension of time under the Contract.
5. The lump sum for each Price Schedule shall be held to include all costs on materials, duties, landing charges, shipping costs for transport by air, sea or land (or any combination thereof), insurance, import taxes and duties, unloading, storage, getting into position, hoisting, lowering, distributing to positions, fixing, labour, materials, scaffolding and staging, plant, supervision, overhead charges, profit, making good prior to handing over to the Employer at the project site and anything reasonably to be inferred from the description of the item and indispensably necessary thereto.
6. The activity descriptions for items within Price Schedules shall be deemed to cover all aspects of the relevant item scope, irrespective of the fact that the Contractor may not have inserted an amount against any item description. The Price Value of each Price Schedule shall be deemed inclusive of all of the Contractor's obligations to execute the part of the Works covered by the Price Schedule and to perform all of his other obligations under the Contract in respect thereof. Additional rows have been provided in Price Schedules under each Price Centre to include additional items to be executed to complete the works fully to operate the 400 MLD plant smoothly. The Contractor shall not be entitled to receive any further or additional payment in respect of such Price Centers and Price Schedules.
7. The Schedule of Prices is divided into separate Schedules as follows:  
Schedule No. 1: Survey & Investigations, Design, Drawings and Documentation  
Schedule No. 2: Intake and Outfall Pipeline Works  
Schedule No. 3: Civil Works  
Schedule No. 4: Mechanical Works  
Schedule No. 5: Electrical and ICA Works  
Schedule No. 6: Miscellaneous Works

- Schedule No. 7: Process Proving
- Schedule No. 8: Summary of CAPEX Price
- Schedule No. 9: Operation & Maintenance
- Schedule No. 10: Summary of O&M Price
- Schedule No. 11: Grand Summary of Price Schedules (CAPEX + O&M)
- Schedule No. 12: Chemicals Laboratory Items
- Schedule No. 13: Workshop Items
- Schedule No. 14: Chemical Consumption Cost during O&M Period
- Schedule No. 15: Manpower Cost during O&M Period
- Schedule No. 16: List of Asset Replacement and Spare Parts over 20 years
- Schedule No. 17: List of Membrane Replacement over 20 years
- Schedule No. 18: Payment Terms

8. The Schedules do not generally give a full description of the Construction details, Plant and Materials to be supplied and the services to be performed under each item. The entered rates and prices shall be deemed to include for the full compliance with all provisions of the conditions of the Contract.
9. Schedule No.8 includes all the cost for the supply, construction, installation, erection, commissioning and testing including process proving test. All the cost of associated civil, mechanical, electrical. ICA and other construction work, items and materials as per contract are to be included under this schedule.
10. The Contactor is required to quote price for each and every item in the price schedule. The items and their quantities in this Price Schedule document are indicative only based on the Employer's experience. The Contractor may add the additional items to be costed as given in the schedules under "any other works" to complete the works fully functional as per the contract. He shall quote items and quantities sufficient to cover all plant exigencies to achieve the specified performance of the 400 MLD SWRO desalination plant.
11. The Contractor is to fill the Prices in the Price Schedule (1-17) and provide the soft copy and hard copy of the excel sheet duly signed and sealed along with the price bid.
12. If the Applicant is JV, the JV agreement should be registered in Chennai as per the prevailing registration act to the condition of registration department after award of the contract. The cost of the JV registration shall be separately quoted in the Schedule 8 – Overall Capex Price.
13. The Contractor shall provide all the spare parts supplied by the Manufacturer along with the new equipment purchased at the end of the contract.
14. The cost of the items for civil, mechanical, electrical, instrumentation and other works shall be rational representing actual cost of the items. Bidders are not allowed to load cost of the items in a schedule to elsewhere in another schedule.

## DECLARATION SHEET

I, the undersigned, .....certify that all the data furnished in preceding schedules and information pertaining to Part-I, Part II and Part-III of this specification are correct and representation of the offer covered by our Bid Proposal No. .... dated ..... I hereby certify that I am duly authorized representative of the bidder whose name appears above my signature.

Bidder's Name \_\_\_\_\_

Authorized representative's Signature \_\_\_\_\_

Authorized representative's Name \_\_\_\_\_

Bidder's Intent:

The Bidder hereby agrees to comply with the requirements and intent of this specification for the price indicated.

Seal of Company

Signature of the Bidder \_\_\_\_\_

Name & Address of the Bidder \_\_\_\_\_

Date : \_\_\_\_\_

\* Note : In case of consortium all the members should sign the bid proposal.

Summary of the Contract Price

Description	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
	Base Cost*	GST	Total Local Cost	Base Cost*	Custom Duty	IGST	Total Foreign Cost	Base Cost*	Custom Duty	IGST	Total Foreign Cost
	A	B	C=(A+B)	D	E	F	G=(D+E+F)	H	I	J	K=(H+I+J)
Schedule No. 1: Surveys & Investigations, Design, Drawings and Documentation (A)											
Schedule No. 2: Intake and Outfall Pipeline (B)											
Schedule No. 3: Civil Works (C)											
Schedule No. 4: Mechanical Works (D)											
Schedule No. 5: Electrical and ICA Works (E)											
Schedule No. 6: Miscellaneous Works (F)											
Schedule No. 7: Process Proving (G)											
Schedule No. 8: Summary of CAPEX Price (H=A+B+C+D+E+F+G)											
Schedule No. 9: Operation & Maintenance for 20 years (I)											
Schedule No. 10: Summary of OPEX Price (J)											
Schedule No. 11: Grand Summary of CAPEX & OPEX Price (K=H+J)											
Provisional Sum (only for Dispute Adjudication Board) (L)			45,000,000.00								
Grand Total (M=K+L)											

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

Signature of Bidder : \_\_\_\_\_

Name : \_\_\_\_\_

Designation : \_\_\_\_\_

Place : \_\_\_\_\_

Date : \_\_\_\_\_

Company Name and Seal

Schedule 1: Surveys & Investigations, Design, Drawings and Documentation

The total cost of the Schedule No. 1. (Plant design, detailed engineering, drawings. Estimation etc.) should not exceed 1.50% of the sum of price from Schedule 2 to Schedule 7.

To include, but not limited to, the following items to deliver the project fit for purpose.

Item No.	Description for 400 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	,N
1.1	Survey, Process, Design and Drawings												
1.1.1	Site survey, Bathymetric study, brine diffusion study, Subsoil investigations and Baseline Environmental monitoring	LOT											
1.1.2	PFD, Mass balance, Process design calculations and P&IDs	LOT											
1.1.3	Site layout plan, General arrangement drawings, Hydraulic diagram, Architectural drawings and Site grading plan	LOT											
1.1.4	Site drainage, Yard piping, Ext. plumbing etc.	LOT											
1.1.5	Single line diagrams, Substations and Electrical drawings	LOT											
1.1.6	Instrumentation & Control Systems	LOT											
1.1.7	Functional Design Specification (FDS)	LOT											
1.1.8	Ancillary Works	LOT											
1.1.9	Any other works, as required (Items should be specified)	LOT											
	Sub Total Schedule 1.1												
1.2	Civil Structural Designs and Drawings												
1.2.1	Intake and Outfall structures including headers and diffusers	LOT											
1.2.2	Intake Pumping station including band screen and pumps	LOT											
1.2.3	Pre-treatment Chemical Buildings + Tanks Storage area	LOT											
1.2.4	Flash mixing and flocculation	LOT											
1.2.5	Lamella Settlers	LOT											
1.2.6	DAFs	LOT											
1.2.7	DMFs, Backwash tanks and Pump houses	LOT											
1.2.8	RO Buildings and ancillary structures	LOT											
1.2.9	RO Chemical Buildings	LOT											
1.2.10	Permeate tanks and Neutralization tanks	LOT											
1.2.11	Remineralization buildings and associate system	LOT											
1.2.12	Product Water Tanks	LOT											

Item No.	Description for 400 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	,N
1.2.13	Clear Water Tank	LOT											
1.2.14	Post Treatment Chemical Buildings	LOT											
1.2.15	Waste Sludge Balancing Tank with pumping system	LOT											
1.2.16	Gravity Thickeners	LOT											
1.2.17	Sludge Holding Tank and thickened sludge Pump House	LOT											
1.2.18	Sludge Treatment Building (BFP Building, along with polymer dosing systems and BFP feed pumping system)	LOT											
1.2.19	Administrative Building	LOT											
1.2.20	Control Building with Laboratory	LOT											
1.2.21	Warehouse and Workshop	LOT											
1.2.22	Sub Stations & Electrical buildings	LOT											
1.2.23	Firefighting and Security buildings	LOT											
1.2.24	Sewage treatment building	LOT											
1.2.25	All yard piping at project site	LOT											
1.2.26	Ancillary works and any other works, as required (Items should be specified)	LOT											
	Sub Total Schedule 1.2												
1.3	Mechanical System Designs and Drawings												
1.3.1	Intake Screen and Intake Pumps and Sluice gates	LOT											
1.3.2	Flash mixers, flocculators, tube settlers, valves, gates and dismantling joints at inlet structure, flocculation and Lamella Settlers	LOT											
1.3.3	Pumps, valves, gates, dismantling joints at DAF	LOT											
1.3.4	Backwash pumps at DMF	LOT											
1.3.5	Filter media, valves, gates, piping and underdrain system at DMFs	LOT											
1.3.6	All mechanical equipment at pretreatment chemical	LOT											
1.3.7	All mechanical equipment including valves, gates, dismantling joints at RO Feed Tank	LOT											
1.3.8	All mechanical equipment at RO system	LOT											
1.3.9	All mechanical equipment at RO chemical buildings	LOT											
1.3.10	All mechanical equipment at CO2 system	LOT											
1.3.11	All mechanical equipment at Limestone Filters	LOT											
1.3.12	All mechanical equipment at post treatment chemical buildings	LOT											
1.3.13	Valves, gates, dismantling joints at Product Water Tanks	LOT											
1.3.14	Valves, gates, dismantling joints at CWR	LOT											
1.3.15	Sludge Balancing Tank with Submersible Pumps	LOT											

Item No.	Description for 400 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
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A	B	C	D	E	F	G	H	I	J	K	L	M	,N
1.3.16	All mechanical equipment at Sludge Thickener	LOT											
1.3.17	All mechanical equipment at Thickened Sludge Holding Tank	LOT											
1.3.18	All mechanical equipment at Belt Filter Press including Feed Pumps	LOT											
1.3.19	Belt Filter Press and polymer dosing system	LOT											
1.3.20	Sludge conveyance system	LOT											
1.3.21	Sewage treatment system	LOT											
1.3.22	Ancillary works and any other works, as required (Items should be specified)	LOT											
	Sub Total Schedule 1.3												
1.4	Electrical Designs and Drawings												
1.4.1	Electrical Load List	LOT											
1.4.2	Typical Earthing Details	LOT											
1.4.3	Typical Lighting Fixture Details	LOT											
1.4.4	Sludge treatment system	LOT											
1.4.5	Relay coordination	LOT											
1.4.6	Single Line Diagram	LOT											
1.4.7	230 kV/110 kV Transformer Sizing Calculation	LOT											
1.4.8	110 kV/11 kV, 11 kV/0.433 kV Transformer Sizing	LOT											
1.4.9	HV, MV & LV switchboard detailed design drawings	LOT											
1.4.10	Capacitor Bank Sizing Calculation	LOT											
1.4.11	Voltage Drop & Cable Sizing Calculation	LOT											
1.4.12	Battery Charger Sizing Calculation	LOT											
1.4.13	Voltage Dip Calculation for Starting of Highest Rating	LOT											
1.4.14	Cable Routing & Trays Layout Drawing	LOT											
1.4.15	Earthing layout Drawing	LOT											
1.4.16	Lighting Layout Drawing - buildings & Site	LOT											
1.4.17	Power & Control Cable Schedule	LOT											
1.4.18	Electrical Equipment data Sheet	LOT											
1.4.19	Local Control Panel details	LOT											
1.4.20	Substation GA Drawing	LOT											
1.4.21	Switchgear Room GA Drawing	LOT											
1.4.22	PMCC Room GA Drawing	LOT											
1.4.23	MCC Room GA Drawing	LOT											
1.4.24	Equipment layout design drawings	LOT											
1.4.25	Heat dissipation, AC and ventilation system sizing	LOT											
1.4.26	Any other works, as required (Items should be specified)	LOT											
	Sub Total Schedule 1.4												
1.5	Instrumentation, Control & Automation												
1.5.1	DCS System Architecture	LOT											



Item No.	Description for 400 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
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A	B	C	D	E	F	G	H	I	J	K	L	M	,N
1.5.2	DCS Functional Specification	LOT											
1.5.3	Instrument Schedule	LOT											
1.5.4	DCS database IO List	LOT											
1.5.5	PLC System configuration/ Controller drawing	LOT											
1.5.6	Instrument control panel design drawings	LOT											
1.5.7	Instrument data sheets	LOT											
1.5.8	General Arrangement of PLC Panels	LOT											
1.5.9	PLC system Power & Control Schematics	LOT											
1.5.10	PLC system BOM	LOT											
1.5.11	DCS system graphic designs	LOT											
1.5.12	Block Logic Diagram	LOT											
1.5.13	PLC and DCS System FAT Procedure	LOT											
1.5.14	Instrument Cable Schedule	LOT											
1.5.15	GA of Junction Boxes	LOT											
1.5.16	GA of Pneumatic Control Boxes	LOT											
1.5.17	Field instrument layout drawings	LOT											
1.5.18	Instrument Hook ups	LOT											
1.5.19	Cable & Trench Layout Drawing	LOT											
1.5.20	FOC Core Allocation Diagram	LOT											
1.5.21	Control Room Layout & Equipment drawings	LOT											
1.5.22	Integrated Security System Specifications	LOT											
1.5.23	Integrated Security System Drawings	LOT											
1.5.24	Fire Alarm & Detection System Specification	LOT											
1.5.25	Fire Alarm & Detection System Drawings	LOT											
1.5.26	Central Control Room Drawings	LOT											
1.5.27	Any other works, as required (Items should be specified)	LOT											
	Sub Total Schedule 1.5												
1.6	As Built Drawing												
1.6.1	Civil & Building works	LOT											
1.6.2	Mechanical systems	LOT											
1.6.3	Electrical system	LOT											
1.6.4	Control, Instrumentation & Automation system	LOT											
1.6.5	Any other ancillary system	LOT											
	Sub Total Schedule 1.6												
1.7	Other Documentation												
1.7.1	Process Design Basis Report	LOT											
1.7.2	Design Basis Report - Electrical	LOT											
1.7.3	Operation & Maintenance Manuals including Trouble Shooting	LOT											

Item No.	Description for 400 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	,N
1.7.4	Training Programme and Manuals	LOT											
1.7.5	Design and Process Details with excel sheets	LOT											
1.7.6	Standard Operating Procedures	LOT											
1.7.7	Any other document, as required	LOT											
	Sub Total Schedule 1.7												
1.8	Bidder shall list here details of additional items required for the complete plant design, drawing and documentation as per the Contract.	LOT											
1.9	Summary of Schedule 1												
	Schedule 1 (Total Carried to Schedule 8, Grand Summary)												

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

Signature of Bidder

Name & Designation

Company Name and Seal

Schedule 2: Intake and Outfall Pipeline

To include, but not limited to the following items to deliver the works from supply to commissioning fit for the purpose as per the Contract Specifications.

Item No.	Description of Intake and Outfall Pipeline Items for Procurement, Supply, Installation/Erection, Testing and Commissioning for 2x200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	,N
2.1	Intake and Outfall (400 MLD)												
2.1.1	Supply of 2500 mm OD HDPE pipelines and all works for laying of twin Intake pipelines for the length of 1150 m offshore	Lot											
2.1.2	Supply and Fixing of Offshore Velocity Cap type Heads (2 No.) with all allied works such as fish net, boulders, manholes, etc. at offshore intake. Two Screen made of Duplex Steel Frame and Cu-Ni Screen with 100 mm C/c opening	Lot											
2.1.3	Supply of 2500 mm OD HDPE pipelines and all works for laying of Outfall pipeline for the length of 750 m Offshore	Lot											
2.1.4	Supply and Fixing of Offshore Diffusers and all allied works at brine outfall. Diffuser made of Super Duplex Steel.	Lot											
2.1.5	Any other works to provide complete intake and outfall piping system (Items should be specified)	Lot											
	Total Schedule 2 (to be carried to Schedule 8)												

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST and custom duty.  
Note: For offshore works, (Intake and outfall) payment will be made based on the actual pipe length supplied and laid.

Signature of Bidder

Name & Designation

Company Name and Seal

Schedule 3: Civil Works

To include, but not limited to the following items to deliver the works from supply to commissioning fit for the purpose as per the Contract Specifications.

Sl. No.	Part	Supply & Construction, Testing, Commissioning of Civil Works for 2 x 200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
				Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B		C	D	E	F	G	H	I	J	K	L	M	N
3.1	Intake and Outfall Structures													
	3.1.1	Supply, construction and commissioning of complete Intake Pumping Station including intake well, band screen area, pump area, discharge piping, flash mixer tank to flocculation system	Lot											
	3.1.2	Supply, construction and commissioning of structures associated with Pigging System	Lot											
	3.1.3	Supply, construction and commissioning of Outfall tank	Lot											
	3.1.4	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.1													
3.2	Shock Chlorination and Air Impingement System													
	3.2.1	Supply, construction and commissioning of Building for shock chlorination dosing pumps, air compressors and air vessels with Hypochlorite storage tank.	Lot											
	3.2.2	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.2													
3.3	Chemical Building for Pre-treatment													
	3.3.1	Supply, construction and commissioning of Chemical Building for pre-treatment with solution preparation tanks, dosing tanks area and storage area for solid chemicals and dosing pumps area for FeCl3, polymer, acid and hypochlorite, bunds, overhead service water tank etc. and other facilities as required.	Lot											
	3.3.2	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.3													
3.4	Coagulation and Flocculation System													
	3.4.1	Supply, construction, and commissioning of Inlet-structure with baffles, flash mixing chambers with weirs, piping, valve & flowmeter chambers and walkway, handrails etc. as applicable	Lot											
	3.4.2	Supply, construction and commissioning of Flocculation Chambers with hopper drain system, walkway platform, handrails etc. as per Contract and complete in all respect.	Lot											
	3.4.3	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.4													
3.5	Lamella Settler													

Sl. No.	Part	Supply & Construction, Testing, Commissioning of Civil Works for 2 x 200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
				Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B		C	D	E	F	G	H	I	J	K	L	M	N
	3.5.1	Supply, construction and commissioning of Lamella Clarifier with tube settlers, hoppers drain system, walkway platform, handrails, pipes, valve & flowmeter chambers etc. as per Contract and complete in all respect.	Lot											
	3.5.2	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.5													
3.6	DAF													
	3.6.1	Supply, construction and commissioning of DAF structure and building along with tanks, pipes, valve & flowmeter chambers and complete system as per the Contract.	Lot											
	3.6.2	Any other works (Items should be specified)	Lot											
	Sub Total of Part 3.6													
3.7	GDMF													
	3.7.1	Supply, construction and commissioning of GDMF structure and building along with media tanks, underdrain system, pipes, valve & flowmeter chambers, inlet channel, filtrate channel and complete system in all respect as per the contract	Lot											
	3.7.2	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.7													
3.8	DMF Backwash and RO Feed Tank													
	3.8.1	Supply, construction and commissioning of DMF backwash and RO feed tank structures, pumps and blower chambers, RO feed pumping station, any other tanks and valve/flowmeter chambers along with structure as needed.	Lot											
	3.8.2	Any other works (Items should be specified)	Lot											
	Sub Total of Part 3.8													
3.9	RO System													
	3.9.1	Supply, construction and commissioning of Industrial Steel Structures to inhouse RO system along with CIP system with chemical storage and dosing system, MCC and all other areas as per the Contract.	Lot											
	3.9.2	Supply, construction and commissioning of permeate tanks as per the Contract.	Lot											
	3.9.3	Supply, construction and commissioning of neutralization tanks as per the Contract.	Lot											
	3.9.4	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.9													
3.10	Chemical Building for RO System													

Sl. No.	Part	Supply & Construction, Testing, Commissioning of Civil Works for 2 x 200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
				Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B		C	D	E	F	G	H	I	J	K	L	M	N
	3.10.1	Supply, construction and commissioning of Chemical Building with all chemical tanks and overhead service water tank and with sufficient area to accommodate all the dosing system, bunds, drain etc. and all other features.	Lot											
	3.10.2	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.10													
3.11	Post Treatment System													
	3.11.1	Supply, construction and commissioning of CO2 storage areas with all pipes, valve/flowmeter chambers and any other structure as needed.	Lot											
	3.11.2	Supply, construction and commissioning of RCC Limestone Filter structure with areas for limestone storage and feeding, all pipes, valve/flowmeter chambers and any structure as needed.	Lot											
	3.11.3	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.11													
3.12	Chemical Building for Post Treatment													
	3.12.1	Supply, construction and commissioning of Chemical Building with all the post treatment chemical tanks and overhead service water tank and with sufficient area to accommodate dosing system, bunds, drain, etc. and all other features.	Lot											
	3.12.2	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.12													
3.13	Waste /Sludge Treatment and Conveyance System													
	3.13.1	Supply, construction and commissioning of Waste Sludge Balance Tank	Lot											
	3.13.2	Supply, construction and commissioning of Gravity Thickeners	Lot											
	3.13.3	Supply, construction and commissioning of Thickened Sludge Holding tanks	Lot											
	3.13.4	Supply, construction and commissioning of Sludge treatment building (BFP building), with sludge feed pump area, chemical storage and dosing areas and all other areas as required.	Lot											
	3.13.5	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.13													
3.14	Product Water Tanks													
	3.14.1	Supply, construction and commissioning of Product Water Tanks with air HEPA filters and watertight cover lids	Lot											
	3.14.2	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.14													
3.15	Clear Water Reservoir													

Sl. No.	Part	Supply & Construction, Testing, Commissioning of Civil Works for 2 x 200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
				Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B		C	D	E	F	G	H	I	J	K	L	M	N
	3.15.1	Supply, construction and commissioning of RCC Clear Water Tank with air HEPA filters and watertight cover lids	Lot											
	3.15.2	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.15													
3.16	Electrical Building and MCC for complete plant													
	3.16.1	Supply, construction and commissioning of substation building including Switchyard & Transformer area	Lot											
	3.16.2	Supply, construction and commissioning of MCC Rooms for complete plant including Diesel Generator Room	Lot											
	3.16.3	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.16													
3.17	Administration, Laboratory and Control Buildings													
	3.17.1	Supply, construction and commissioning of Administrative building including Canteen area and guest house	Lot											
	3.17.2	Supply and Construction of Plant Control and Laboratory building	Lot											
	3.17.3	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.17													
3.18	Warehouse and Workshop													
	3.18.1	Supply, construction and commissioning of Warehouse - Industrial Steel Structure	Lot											
	3.18.2	Supply, construction and commissioning of Workshop - Industrial Steel Structure	Lot											
	3.18.3	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 3.18													
3.19	Sewage Treatment Plant													
	3.19.1	Supply, construction and commissioning of sewage treatment plant Building	Lot											
	3.19.2	Supply, construction and commissioning of all tanks for the treatment plants	Lot											
	3.19.3	Any other civil works (Items should be specified)	Lot											
	Sub Total of Part 2.19													
3.20	Misc. Works at Site													
	3.20.1	Supply, construction and commissioning of Parking lot, sign board, light, traffic signal, Site clearance, filling, removal of slurry to assigned quarry, temporary works etc., as specified	Lot											
	3.20.2	Supply of material and Backfilling of the plant site to bring uniform ground level at CD+6.50m excluding burial and area not included in the plant.	Lot											
	3.20.3	Supply, construction and commissioning of RCC retaining wall up to CD +6.50m and min 2.50m	Lot											

Sl. No.	Part	Supply & Construction, Testing, Commissioning of Civil Works for 2 x 200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
				Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B		C	D	E	F	G	H	I	J	K	L	M	N
		high Brick wall boundary around the plant site and burial ground sites												
	3.20.4	Supply, construction and commissioning of two Plant Gates and Security smart houses with cameras	Lot											
	3.20.5	Firefighting building and associated structures												
	3.20.5	Any other works (Items should be specified)	Lot											
	Sub Total of Part 3.20													
3.21	Roads and Drainage													
	3.21.1	Supply and Construction of all Roads and paths etc. as specified at per the plant layout	Lot											
	3.21.2	Supply and Construction of Site storm water drainage system, both for the plant and burial grounds as required and Rainwater Harvesting structures.	Lot											
	3.21.3	Plantation, Landscaping as specified	Lot											
	3.21.4	All yard pipe works not covered above	Lot											
	3.21.5	Supply, construction and commissioning of Firefighting Rooms for complete plant	Lot											
	3.21.6	Any other works (Items should be specified)	Lot											
	Sub Total of Part 3.21													
3.22	(all area of the works) required in Civil Supply, Construction works for the Desalination Plant as per the Contract Specifications													
	Sub Total of Part 3.22													
	Total Schedule 3													
	(Sub Total 3.1 to 3.22)													
	Schedule 3 (Total Carried to Schedule 8, Grand Summary)													

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

Signature of Bidder

Name & Designation

Company Name and Seal



Schedule 4: Mechanical Works

To include, but not limited to the following items to deliver the works from supply to commissioning fit for the purpose as per the Contract Specifications.

Item No.	Description of Mechanical Items for Procurement, Supply, Installation/Erection, Testing and Commissioning for 2x200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
4.1	Intake Pumping Station Area (400 MLD)												
4.1.1	On shore Travelling band screen with 3mm mesh (4 x 33%)	Lot											
4.1.2	Vertical Turbine Intake Sea Water Pumps (6W+3S) made of Super Duplex with PREN≥41 including Electric Motor (s) complete with intake, outlet and nonreturn valves, dismantling joints, piping etc.	Lot											
4.1.3	Pigging Systems complete in all respect for intake pipeline cleaning with pig launching and receiving system having two Pigs	Lot											
4.1.4	Isolation Gates (Duplex Steel) for Intake and Outfall tanks	Lot											
4.1.5	Shock chlorination for offshore Heads including tanks, injection system, pumps, piping, valves and all allied items.	Lot											
4.1.6	Compressed air system including compressors, pressure vessels, piping etc. complete in all respect for offshore Heads	Lot											
4.1.7	Any other works to provide the complete system in the intake pumping station area (Items should be specified)	Lot											
4.2	Pre-treatment Chemical Systems (2x200 MLD)												
4.2.1	98% Sulphuric Acid bulk Storage tanks: Cylindrical horizontal dished end carbon steel (IS 2062) tanks (2 tanks), internally ebonite Lined & externally coated with epoxy paint, complete with dosing tanks and dosing pumping system facility, transfer/unloading pumps, scrubbers, etc. and all other associated structures and features to complete the system.	Lot											
4.2.2	GRP tanks for FeCl <sub>3</sub> and hypochlorite bulk storage (2 tanks for each chemical for total 1 month storage) with transfer/onloading pumps and scrubbers, and all other associated structures and features to complete the system	Lot											
4.2.3	Hypochlorite dosing system with pumps, valves, strainers, and equipment complete in all respect for automatic chemical dosing as per the contract	Lot											
4.2.4	FeCl <sub>3</sub> dosing system with pumps, agitators, valves, strainers, EOT crane and equipment complete in all respect for automatic chemical dosing as per the contract	Lot											

Item No.	Description of Mechanical Items for Procurement, Supply, Installation/Erection, Testing and Commissioning for 2x200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
4.2.5	Polymer dosing system with pumps, agitators, valves, strainers, EOT, powder polymer transfer system using ejector and equipment complete in all respect for automatic chemical dosing as per the contract	Lot											
4.2.6	Any other works to provide the complete system (Items should be specified)	Lot											
<b>4.3</b>	<b>Pre-treatment Process Units (2 x 200MLD)</b>												
4.3.1	Coagulation and flocculation system including flash mixer, flocculator mixers complete with all associated piping and valves, gates, sludge disposal facility etc.	Lot											
4.3.2	Lamella Settlers including all associated piping and valves, gates, sludge disposal facility etc.	Lot											
4.3.3	Dissolved Air Floatation, complete with pressurized vessel, recycle pumps and all associated valves, pipes, sludge disposal facility etc. in totality	Lot											
4.3.4	Gravity Dual Media Filtration, complete in totality including backwash pumps and blowers, and all associated valves and equipment required for its fully automated operations.	Lot											
4.3.5	Any other works to provide the complete system (Items should be specified)	Lot											
<b>4.4</b>	<b>DMF Backwash and RO Feed Tank (2 x 200 MLD)</b>												
4.4.1	DMF backwash and RO feed-tank - complete in totality including all valves and gates along with any equipment needed as per the Contract.	Lot											
4.4.2	Any other works (Items should be specified)	Lot											
<b>4.5</b>	<b>RO Skids, Chemical Dosing and CIP System (2 x 200 MLD)</b>												
4.5.1	Cartridge Filters including housing and complete with all valves and piping, drain, vents, plugs, foundation bolts, leg supports, static mixers etc. for complete requirement in RO system	Lot											
4.5.2	RO skids/trains including all items to complete the skids	Nos.											
4.5.3	Reverse Osmosis 8” membranes	Nos.											
4.5.4	Pressure Vessel for RO membranes including Super Duplex coupling.	Nos.											

Item No.	Description of Mechanical Items for Procurement, Supply, Installation/Erection, Testing and Commissioning for 2x200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
4.5.5	Antiscalant, SMBS, Caustic Soda and any other chemicals bulk storage tanks and dosing Systems including tanks, pumps, valves, strainers, piping, EOT crane and all other equipment complete in all respect for automated chemical dosing.	Lot											
4.5.6	RO Booster Pumps with Impeller, casing, shaft Super Duplex with PERN≥41. Motor, VFD complete with all piping and valves.	Nos.											
4.5.7	RO high pressure pumps with impeller, casing, shaft Super Duplex (2507) with PERN≥43. Motor, VFD complete with all piping and valves.	Nos.											
4.5.8	ERD Feed Pumps with Impeller, casing, shaft Super Duplex with PERN≥41. Motor, VFD (if required) complete with all piping and valves.	Nos.											
4.5.9	ERD Recirculation Pumps with Impeller, casing, shaft Super Duplex with PERN≥43. Motor, VFD (if required) complete with all piping and valves.	Nos.											
4.5.10	Energy Recovery Device –ERD) - pipe headers, flanges, U clamps, fasteners, Victaulic coupling for making connections complete in all respects including anchor foundation bolts etc.	Nos.											
4.5.11	Cleaning in Place (CIP) system complete in totality with heater, pumps, valves and piping etc. and all equipment needed for fully automated process.	Lot											
4.5.12	Any other works to provide the complete system (Items should be specified)	Lot											
<b>4.6</b>	<b>Post Treatment System (2 x 200 MLD)</b>												
4.6.1	Lime filters along with auto lime charging system including pipe, valves complete in all respect for auto operation	Lot											
4.6.2	Lime filters backwash pumping and blower system with pipe, valves complete in all respect for auto operation												
4.6.3	CO <sub>2</sub> storage vessels	Lot											
4.6.4	CO <sub>2</sub> Dosing System comprising of CO <sub>2</sub> filter, Flow regulating valve, Automatic shut off valve, Manual shut off valve, Pressure reducing valve, Safety valves, Discharge valve, Limit switches, automatic change over planes, all mounted on a stainless-steel base frame CO <sub>2</sub> Flow meter System, Mass flow sensor (fully calibrated) assembled to process pipe As per designed pipe size and pressure ranges.	Lot											

Item No.	Description of Mechanical Items for Procurement, Supply, Installation/Erection, Testing and Commissioning for 2x200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
4.6.5	Caustic storage, dosing system with all tanks, pumps, valves, pipes, EOT and all equipment for auto chemical dosing	Lot											
4.6.6	Hypochlorite storage, dosing system with all tanks, pumps, valves, pipes, EOT and all other equipment for auto chemical dosing	Lot											
4.6.7	Any other works to provide the complete system (Items should be specified)	Lot											
		Lot											
<b>4.7</b>	<b>Product Water Tanks, CWR and Outfall Tank</b>	Lot											
4.7.1	Product Water Tanks, CWR and Outfall–Tank - all mechanical works complete in totality including all valves, gates, piping along with any equipment needed as per the Contract.	Lot											
4.7.2	Any other works to provide the complete system (Items should be specified)	Lot											
<b>4.8</b>	<b>Waste /Sludge Conveyance and Treatment System</b>												
4.8.1	Waste Sludge Balance–Tank - all mixer, submersible pumps, valves, static mixer etc.	Lot											
4.8.2	Gravity Thickeners - all mechanical system, including valves, pipes, rotating bridge with mixer and sludge scraping system,	Lot											
4.8.3	Thickened Sludge Holding–tank - all mechanical system, including valves, pipes, mixer and BFP feed pumps	Lot											
4.8.4	BFP system - BFP units complete in all respect for auto operation producing 25% consistent solid chips.	Lot											
4.8.5	Chemical dosing system i.e. polymer for thickener and BFP complete in all respect.	Lot											
4.8.6	Any other works to provide the complete system (Items should be specified)	Lot											
<b>4.9</b>	<b>Miscellaneous</b>												
4.9.1	Mechanical works for Air Compressor, Air Conditioning & Ventilation System including Cooling tower etc. as required in all buildings and covered structures.	Lot											
4.9.2	Fire Detection and Protection System in all building and covered places. Fire Fighting vehicles, pumps, pipes and associated items.	Lot											
4.9.3	Maintenance Bay Equipment (EOT Cranes, Hoist & Monorails etc.) as needed in all buildings and Industrial structures	Lot											

Item No.	Description of Mechanical Items for Procurement, Supply, Installation/Erection, Testing and Commissioning for 2x200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
4.9.4	Building Services including domestic water systems. The Bidder shall list here details of any additional items required for a complete installation	Lot											
4.9.5	Workshop equipment and other items	Lot											
4.9.6	Mechanical equipment at sewage treatment	Lot											
4.9.7	Other Miscellaneous Equipment / Items / System not mentioned above but as required in Employers Requirements in contract (Items should be specified)	Lot											
4.10	Bidders shall list here details of any additional items required for a complete system for smooth automatic operation of the 2x200 MLD desalination plant												
4.10.1													
4.10.2													
4.10.3													
4.11	Building Services for water supply and other mechanical works requirements. The Bidder shall list below details of items required for a complete installation of all mechanical system at all buildings												
4.11.1													
4.11.2													
4.11.3													
	Total Schedule 4												
	Total Schedule 4 (Total Carried to Schedule 8, Grand Summary)												

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

Signature of Bidder

Name & Designation

Company Name and Seal

Schedule 5: Electrical and ICA Works

To include, but not limited to the following items to deliver the works from supply to commissioning fit for the purpose as per the Contract Specifications.

Item No.	Description of Electrical & ICA Items Procurement, Supply, Installation/Erection, Testing and Commissioning for 2x200 MLD Plant		Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
		Unit	Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
5.1	Intake and Outfall (400 MLD)												
5.1.1	All electrical works at Intake and Outfall system	Lot											
5.1.2	All instrumentation and control works as per the contract at intake and outfall system including DCS Controllers, IO units, instrumentations, flow meters, air bursting, shock chlorination system and chlorine dosing to intake pump discharge.	Lot											
5.1.3	Any other works (Items should be specified)	Lot											
5.2	Intake Pumping Station (400 MLD)												
5.2.1	All electrical works at Intake pumping station including pigging system	Lot											
5.2.2	All instrumentation control and automation (ICA) works as per the contract including DCS Controllers, IO units, instrumentations, pH, Temp, Chlorine, Conductivity, Turbidity, flowmeters, condition monitoring system etc. and all other analysers as per the contract	Lot											
5.2.3	Any other works (Items should be specified)	Lot											
5.3	Pre-treatment Chemical Systems (2x200 MLD)												
5.3.1	All electrical works at pre-treatment chemical system as per the contract including hypochlorite, sulfuric acid, ferric chloride, polymer dosing system etc.	Lot											
5.3.2	All ICA works including instrumentation and automation as per the contract for all pre-treatment chemical dosing system	Lot											
5.3.3	Any other works ( Items should be specified)	Lot											
5.4	Pre-treatment Process Units (2 x 200MLD)												
5.4.1	All electrical works as per the contract at pre-treatment units including flash mixer, flocculation tanks, lamella settlers, DAF and GDMF units	Lot											
5.4.2	All ICA works as per the contract for all pre-treatment process units including filter consoles, instrumentations, analysers, DCS controllers and IO units complete in all respect for auto operation.	Lot											

Item No.	Description of Electrical & ICA Items Procurement, Supply, Installation/Erection, Testing and Commissioning for 2x200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
5.4.3	Any other works (Items should be specified)	Lot											
<b>5.5</b>	<b>GDMF Backwash and RO Feed Tank (2 x 200 MLD)</b>	Lot											
5.5.1	All electrical works as per the contract at RO feed tank.	Lot											
5.5.2	All ICA works as per the contract for RO feed Tank	Lot											
5.5.3	Any other works (Items should be specified)	Lot											
<b>5.6</b>	<b>RO Skids and CIP System (2 x 200 MLD)</b>												
5.6.1	All electrical works as per the contract at RO system including CIP tank, permeate tank neutralization tank etc.	Lot											
5.6.2	All ICA works as per the contract at RO system, CIP tank, permeate tank, neutralization tank including instrumentations, flowmeters, pressure measurement, analysers such as chlorine, turbidity, Boron, conductivity, TSS, SDI, ORP and DCS IO units and Controllers etc. as per the contract.	Lot											
5.6.3	Any other works (Items should be specified)	Lot											
<b>5.7</b>	<b>Post Treatment System (2 x 200 MLD)</b>												
5.7.1	All electrical works as per the contract at CO <sub>2</sub> generator, CO <sub>2</sub> storage and dosing system and Limestone filters, Caustic dosing storage and system along with auto lime charging system complete in all respect for auto operation	Lot											
5.7.2	All ICA works as per the contract at CO <sub>2</sub> system and Limestone filters and Caustic system including DCS Controllers, IO units, Instrumentation flowmeters, pressure, level measurements, analysers such as chlorine, conductivity, hardness, pH etc.	Lot											
5.7.3	Any other works (Items should be specified)	Lot											
<b>5.8</b>	<b>Product Water Tanks, CWR and Outfall Tank</b>												
5.8.1	All electrical works as per the contract at product water tanks, CWR and outfall tanks.	Lot											
5.8.2	All ICA works as per the contract at product water tanks, CWR and outfall tanks.	Lot											
5.8.3	Any other works (Items should be specified)	Lot											

Item No.	Description of Electrical & ICA Items Procurement, Supply, Installation/Erection, Testing and Commissioning for 2x200 MLD Plant		Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
		Unit	Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
5.9	<b>Waste /Sludge Conveyance and Treatment System</b>												
5.9.1	All electrical works as per the contract at sludge balance tank, thickeners, sludge holding tanks and BFP building including polymer ejector	Lot											
5.9.2	All ICA works including flowmeters and analysers as per the contract at sludge balance tank, thickeners, sludge holding tanks and BFP building including polymer ejector loading system	Lot											
5.9.3	Any other works (Items should be specified)	Lot											
5.10	<b>Substation</b>												
5.10.1	230 kV/110 kV –substation in totality including two 150MVA transformers and switchyards etc.	Lot											
5.10.2	The transmission cables from 230/110 kV substation to 110/11kV substations for two DSP streams												
5.10.3	110 kV/11 kV substation in totality including transformers etc.	Lot											
5.10.4	Auxiliary Transformers for LV Services (11kV/433 V)	Lot											
5.10.5	11 KV Switchgear	Lot											
5.10.6	HV and LV Switchgear	Lot											
5.10.7	MV & LV Bus Duct	Lot											
5.10.8	Cabling, Grounding & Lightning Protection	Lot											
5.10.9	Communication System	Lot											
5.10.10	Illumination & Power Supply System	Lot											
5.10.11	Control & Instrumentation including all instruments	Lot											
5.10.12	Any other works ()	Lot											
5.11	<b>Control System</b>												
5.11.1	All DCS hardware works as per the Contract including Controllers, Remote IO, Operator Stations, DCS Control Servers, Communication system, CMMS/ Optimization servers, FOC, Display units, GPS, Rack units, Large Wall Screen, Printers, Routers, DCS ergonomic Operator Control desks, configuration Laptops, Reporting system, any peripherals. Etc	Lot											
5.11.2	All DCS software works as per the contract including database engineering, configuration and programming for Operating System, Historian, CMMS, Optimization, Cybersecurity, Antivirus,	Lot											



Item No.	Description of Electrical & ICA Items Procurement, Supply, Installation/Erection, Testing and Commissioning for 2x200 MLD Plant		Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
		Unit	Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
	Instrumentation Management, Reporting system. Etc.												
5.11.3	Any other works (Items should be specified)	Lot											
5.12	Miscellaneous												
5.12.1	Electrical and ICA works at sewage treatment system	Lot											
5.12.2	All electrical and ICA system at the administrative building and all other buildings	Lot											
5.12.3	All plant lighting system including plant earthing and lightning protection system	Lot											
5.12.4	The UPS and Diesel Generators as per contract	Lot											
5.12.5	Other Miscellaneous Equipment / Items / System not mentioned above but as required in Employers Requirement Part-II (Items should be specified)	Lot											
5.13	Bidders shall list here details of any additional items required for a complete electrical and ICA system for smooth and automatic operation of the 400 MLD plant												
5.13.1													
5.13.2													
5.13.3													
	Total Schedule 5												
	Total Schedule 5 (Total Carried to Schedule 8, Grand Summary)												

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

Signature of Bidder

Name & Designation

Company and Seal

Schedule 6: Miscellaneous Works

To include, but not limited to the following items to deliver the works from supply to commissioning fit for the purpose as per the Contract Specifications.

Item No.	Description of Miscellaneous Items for Procurement, Supply, and Installation/Erection, Testing and Commissioning for 2x200 MLD Plant	Unit	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
6.1	Chemical Laboratory Items as per schedule and required. (complete Schedule 12)	Lot											
6.2	Workshop items as per schedule and required. (complete Schedule 13)	Lot											
6.3	Heating, Ventilation and Air conditioning systems in all buildings/ structures as required and specified in the contract	Lot											
6.4	Firefighting s–stem - fire detection and protection system in all building and covered p–aces - including pumps, pipes, valves, and allied items as per requirement and specifications in the contract	Lot											
6.5	Security and Surveillance system at the plant including gate security, plant monitoring and access system as per requirement and specifications in the contract	Lot											
6.6	Any other works required to operate the 400 MLD DSP smoothly meeting the contract requirements such as vehicles for the Employer. FAT, temporary site office etc. (Items should be specified)	Lot											
6.7		Lot											
	Total Schedule 6												
	Total Schedule 6 (Total Carried to Schedule 8, Grand Summary)												

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

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Schedule 7: Process Proving

			Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
Item	Description	Unit	Base Cost*	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
7	Three months of Process Proving Test Period												
7.1	Power Usage (@ INR 6.35/ kWh	Lot											
7.2	Chemical Usage	Lot											
7.3	Transportation of Sludge	Lot											
7.4	Manpower	Lot											
7.5	Lumpsum Other O & M Price e. g. Asset Replacement etc. Bidder shall provide a list of Asset Replacement items with cost	Lot											
	List of items (Indicate Foreign Currency where applicable)												
7.6	Total Schedule 7												
	Total Schedule 7 to be carried to Schedule 8, Grand Summary)												

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

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Schedule 8: Summary of CAPEX Price

Schedule	Description of Works – Supply, Construction, Installation/ Erection, Testing, Commissioning and Process Proving	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
		Base Cost*	GST	Total Price (E)=(C)+(D)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	I	J	K	L	M	N
1	Survey, Design, Drawings and Documentation											
2	Intake and Outfall Piping											
3	Civil Works;											
4	Mechanical Works;											
5	Electrical and ICA Works;											
6	Miscellaneous Works											
7	Process Proving											
8	JV agreement registration charges as per GoTN registration department											
GRAND TOTAL OF CAPEX PRICE												

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

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Schedule 9: Operation and Maintenance

The following O&M expenditure sheet is required to be filled by the Bidders for 20 years of O&M Period (1 to 20 sheets).

			Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
Item	Description	Unit	Base Cost *	GST	Total Price (F)=(D)+(E)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I )	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	First year												
1.1	Variable Cost including chemicals and others.												
	Chemicals cost (complete the Schedule-14)	Lot/ year											
	Any other variable cost (attached details separately)	Lot/ year											
	Sub Total Variable Price												
1.2	Fixed Cost including manpower cost, asset replacement cost, membrane cost and administrative cost												
	Manpower cost (complete the Schedule-15)	Lot/ year											
	Asset Replacement cost (complete the Schedule-16)	Lot/ year											
	Membrane Replacement cost (complete the Schedule 17)	Lot/ year											
	Administrative cost (attach details separately)	Lot/ year											
	Routine Maintenance (attach details separately)	Lot/ year											
	Any other fixed cost (such as Fuel, Vehicle maintenance, sludge disposal, Environmental monitoring and statutory compliance reporting etc. attach details separately)	Lot/ year											
	Sub Total Fixed Price												
1.3	Total O&M Price (1.1 + 1.2) - First year												

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

Note:- Sub-total of Fixed Price should not be more than 30% of the Total O&M Price for each year. For Sludge disposal, the Bidder shall provide the per unit rate for disposal beyond 20 km.

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Note: Similar Sheets are to be filled for the rest of the year from 2<sup>nd</sup> year to 20<sup>th</sup> year.

Schedule 10: Summary of O&M Price

Year	Description	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
		Base Cost*	GST	Total Price (E)=(C)+(D)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	I	J	K	L	M	N
1.	1 <sup>st</sup> Year O&M Price											
2.	2 <sup>nd</sup> Year O&M Price											
3.	3 <sup>rd</sup> Year O&M Price											
4.	4 <sup>th</sup> Year O&M Price											
5.	5 <sup>th</sup> Year O&M Price											
6.	6 <sup>th</sup> Year O&M Price											
7.	7 <sup>th</sup> Year O&M Price											
8.	8 <sup>th</sup> Year O&M Price											
9.	9 <sup>th</sup> Year O&M Price											
10.	10 <sup>th</sup> Year O&M Price											
11.	11 <sup>th</sup> Year O&M Price											
12.	12 <sup>th</sup> Year O&M Price											
13.	13 <sup>th</sup> Year O&M Price											
14.	14 <sup>th</sup> Year O&M Price											
15.	15 <sup>th</sup> Year O&M Price											
16.	16 <sup>th</sup> Year O&M Price											
17.	17 <sup>th</sup> Year O&M Price											
18.	18 <sup>th</sup> Year O&M Price											
19.	19 <sup>th</sup> Year O&M Price											
20.	20 <sup>th</sup> Year O&M Price											
GRAND TOTAL OF O&M PRICE												

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

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Schedule 11: Grand Summary of Price Schedule (CAPEX & O&M Price)

		Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
Schedule	Description of Works – Supply, Construction, Installation/ Erection, Testing, Commissioning and Process Proving and O&M for 20 years	Base Cost*	GST	Total Price (E)=(C)+(D)	Base Cost*	Custom Duty	IGST	Total Price (J)=(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=(K+L+M)
A	B	C	D	E	F	G	I	J	K	L	M	N
1	Survey, Design, Drawings and Documentation											
2	Intake and Outfall Piping											
3	Civil Works;											
4	Mechanical Works;											
5	Electrical and ICA Works;											
6	Miscellaneous Works											
7	Process Proving											
8	JV agreement registration charges as per the GoTN registration department.											
9	Operation and Maintenance Price											
GRAND TOTAL OF PRICE SCHEDULE												

\* Base Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

Signature of Bidder

Name & Designation

Company Name and Seal

Schedule 12: Chemical Laboratory Items

Item No.	Description of Items to be Procured for Chemical Laboratory	Unit	Qty	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
				Unit Price*	GST	Total Price F=C*(D+E)	Unit Price*	Custom Duty	IGST	Total Price (J)=C*(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=C*(K+L+M)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Electronic Balance	No.	4											
2	Bunsen Electric Heater	No.	4											
3	Magnetic Stirrer - 1MLH	No.	4											
4	Water bath with 6 to 8 concentric holes and discs, electrically heated	No.	2											
5	Muffle Furnace	No.	2											
6	Color Comparator	No.	2											
7	Centrifuge system	Set	2											
8	Turbidity meter	No.	4											
9	Autoclave	No.	2											
10	Coagulation-Flocculation Simulator	No.	2											
11	COD Assembly	No.	2											
12	Distilled water plant	No.	2											
13	ORBECO Analytical System	No.	2											
14	ORBECO HELLIGE -975MP	No.	2											
15	Electric Oven	No.	2											
16	BOD Incubator	No.	2											
17	TDS meter	No.	4											
18	Spectrophotometer- UV-UIS Spectrophotometer Latest Unit	No.	2											
19	Potable kit for pH/ORP/ Cond/TDS/Temp/DO meters		4											
20	Weight Balance	No.	4											
21	pH meter- pH Scan2	No.	4											
22	Refrigerator and Freezer, 500 lts capacity of approved make	No.	2											
23	Burette, Pipette, Flask	Set	50											
24	Measuring Cylinders (1000 ml, 500 ml, 200 ml, 100 ml, 50 ml, 25 ml)	Set	6											
25	Chlorine analyzer (comparator)	No.	4											
26	Conductivity meter	No.	4											
27	Mercury Ioniser	No.	2											
28	Dissolved Oxygen Meter	No.	4											
29	Colony counter	No.	2											



Item No.	Description of Items to be Procured for Chemical Laboratory	Unit	Qty	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
				Unit Price*	GST	Total Price F=C*(D+E)	Unit Price*	Custom Duty	IGST	Total Price (J)=C*(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=C*(K+L+M)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
30	Membrane Filtration Assembly	No.	2											
31	Binocular Microscope	No.	2											
32	Jar test apparatus	No.	2											
33	Sampling Bottles (Reagent Bottles of 250 ml Capacity)	No.	100											
34	Wire Baskets	No.	10											
35	Suction Flask (1litre capacity)	No.	4											
36	TOC analyser – High Temp Combustion type													
37	All types of laboratory glassware, accessories and other consumables and reagents for minimum two years requirement.	No.	Lot											
	<b>Total Schedule 12 to be carried to Schedule 6 - Miscellaneous</b>													

\* Unit Price includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

Signature of Bidder

Name & Designation

Company Name and Seal

Schedule 13: Workshop Items

Item No.	Description of Items to be Procured for Workshop	Qty	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Unit Price*	GST	Total Price F=C*(D+E)	Unit Price*	Custom Duty	IGST	Total Price (J)=C*(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=C*(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Heavy duty high speed lathes, 250 mm centre height, 1500 mm between centres including all features as per the specifications	1											
2	Heavy duty high speed lathes, 200 mm centre height, 1500 mm between centres including all features as per the specifications	1											
3	Heavy duty high speed vertical lathes, 2000 mm table diameter, working piece diameter 2300 mm, working piece height 1400 mm, working piece weight 20000 kg, with accessories	1											
4	Horizontal boring, drilling and milling machine, work spindle dia.100 mm, self-acting traverse of spindle at one setting 700 mm, with all features as per the specifications	1											
5	Surface grinding machine wet grinding, grinding wheel diameter/ width 250/25 mm, distance table to centre of spindle approx. 500 mm, table clamping area 900 x 250 mm, steeples adjustable including electrical equipment with motor and standard accessories	3											
6	Column grinder, with 2 wheels 300 x 40 x 76 mm for wet grinding, left hand side with normal rest, right hand side with adjustable workpiece support table and angle stop, with all features as per the specifications	2											
7	Universal milling machine, table size 1300 x 400 mm, steeples feed drive in all three table directions, longitudinal travel of table 1000 mm, cross travel of table 340 mm with all features as per the specifications	2											
8	Vertical milling machine, table size 1900 x 400 mm, steeples feed drive in all three table directions, integrated automatic lubricating system, cooling system, main spindle drive, motor protection switch, controls integrated on panel, accessories.	1											
9	Heavy duty high speed shaping machine, 725 mm ram stroke, 725 x 340 mm table size, shaping width 600 mm, complete with electric motor equipment, automatic vertical feed of the tool holder, main switch, motor protection switch, rotary concentric machine vice, with standard accessories.	1											
10	Screw threading machine, with solid steel frame, including pole- changing 3-phase motor for pipe and whitworth thread from 1/4 to 2", metric threads M6 to M52, with motor protection switch and standard accessories.	1											
11	Heavy duty power hacksaw, fully hydraulic 4 stroke, cutting range in round material 225 mm, for metering from 450 mm, complete with electric motor equipment, stock support 500 mm high with heavy material Toller, accessories.	2											

12	Heavy duty circular column drilling machine, drilling capacity in steel up to 35 mm, in cast iron up to 45 mm, 350 mm column-spindle distance, column diameter approx. 160 mm, stepless, with at least.3 kW electric motor, motor protection switch, coolant supply pump, accessories.	1											
13	Bench drilling machine, drilling capacity in steel up to 10 mm, radius 200 mm, with high-capacity high-speed chuck to 10 mm, adjustable rectangular table, drilling depth 60 mm, column diameter 70 mm, base plate 170 x 170 mm, complete with electrical equipment and motor, motor protection switch and standard accessories.	2											
14	Electric pipe bender, complete with all necessary tooling required for cold bending heavy gauge steel pipe of up to 100 mm inside diameter to the smallest radic possible, limited only by the pipe bore and wall thickness, without flattening.	2											
15	Universal folding press, for hand operation, including base frame, for 3 mm plate thickness, 2000 mm working width, 45° angle bar, 3 mm rad. round bar, steel rail for the bending beams, accessory holders with standard accessories.	2											
16	Combined plasma welding and metal cutting set, cutting range from 2 to 25 mm in steel, provisions for connecting to argon, nitrogen or hydrogen gas bottles complete with welding and manual cutting torches, pressure regulators and one year's supply of welding rods and gas bottles.	2											
17	Mobile work benches 1500 x 700 mm surface area, suitable for containing one set of mobile work bench tools each.	2											
18	Steel tool cupboards 500 x 500 x 1000 mm high, including 125 mm leg height, with upper steel drawer and two removable trays, door latch for padlock, including lock.	4											
19	Steel tool cupboards with double doors, 1000 x 500 x 1000 mm high including 125 mm leg height, with centre partition, each side separately lockable with two steel drawers and two removable trays, door latches for padlocks, including padlocks.	6											
20	Work benches with 1500 x 700 x 50 mm plywood top, backboard, angle iron supporting frame, one steel plate drawer, with safety lock and two keys, one shelf underneath of extra strong construction, with six (6) all-steel parallel vices, 150 mm jaw width with bolts for through attachment to the benches.	10											
21	Vertical drilling machine	2											
22	Hacksaw machine	2											
23	Bench Grinder	2											
24	Miscellaneous items and hand tools with safety equipment	Lot											
25	Toolboxes	10											

26	Portable Noise level tester	4											
27	Portable vibration tester	4											
28	Magnetic base dial gauge	4											
29	Portable temperature meter	4											
30	Filler gauge	4											
31	Precision spirit level	4											
32	415V, 3 phase, 50hz, 40kVA portable DG set (trolley mounted) including all necessary metering & protection unit, battery, manual control panel, plug & socket, etc., with cable and accessories. Acoustic enclosure which complies with all environmental regulations shall be included as a part of the supply.	2											
33	Toolbox with all necessary tools fixed spanner, ring spanners, screwdrivers, adjustable jaw spanners, etc.	5											
34	Hand trolley (500kg capacity)	4											
35	Tripod with chain pulley blocks of 1 Ton capacity (6.0m legs)	4											
36	Welding set, 400 amp, three-phase regulator type, air-cooled, wheel mounted with 15 m welding cable, 2 m. welding cable for earthing, one welding holder, one welding screen with glass and 3 cable lugs, one pair hand gloves and one wire brush	2											
37	Portable hand drill (heavy duty) of capacity 13 mm to 23 mm with ½” drill chuck but with drill bits and drill stand	4											
38	Tong tester, 1000 Amp	4											
39	Hand crimping tool with dies suitable for cable joining up to 95 sq. mm.	2											
40	Hydraulic crimping tool, suitable for cable joining from 25 to 400 sq. mm.	4											
41	Hydraulic jack, 5 Ton capacity	4											
42	De-watering pump sets of 5 kW with 50 meters hose pipe	4											
43	Motorized and handle operated insulation resistor tester, 5 kV (multi-range setting), with battery pack	4											
44	Handle-operated insulation resistor tester - 1000 Volts	4											
45	Megger, 1000 volt	2											
46	Megger, 5000 volts (motorized)	2											
47	Insulating oil tester and filter	2											
48	Hand grinder (Angle 7”)	2											
49	Clamp-on Digital Meter (0 - 1000 Amperes)	2											
50	Multi-meter (Digital)	2											
51	Micro-Ohm meter	2											
52	Portable vacuum cleaner/blower (industrial type)	4											
53	Aluminium folding ladder - 8 meters	4											

54	4 terminal Earth Tester (digital)	4											
55	Rubber gloves (110 kV rating)	12											
	<b>Total Schedule 13 to be carried to Schedule 6 - Miscellaneous</b>												

\* Unit Price includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

*Signature of Bidder*

*Name & Designation*

*Company Name and Seal*

Schedule 14: Chemical Consumption Cost during O&M Period

Item	Description of Chemical Consumption (Yearly) during O&M Period	Unit (as supplied)	Guaranteed Quantity	Unit Rate* (INR)	GST (INR)	Total Price (INR)/ Annum G= (D x E) +F
A	B	C	D	E	F	G
(a)	Hypochlorite for Shock Chlorination	Tons / year				
(b)	Hypochlorite for Pre Chlorination	Tons / year				
(c)	Sulfuric acid for Pre-Chlorination	Tons / year				
(d)	FeC13 solution dosing (40%)	Tons / year				
(e)	Anionic Polymer dosing for flocculation (Food grade)	Tons / year				
(f)	Cationic Polymer for Thickener	Tons / year				
(g)	Cationic Polymer for BFP (Non Food grade)	Tons / year				
(h)	Antiscalant	Tons / year				
(i)	Sodium Bisulphite	Tons / year				
(j)	Any other chemical for biofouling control	Tons / year				
(k)	CO2 for remineralization	Tons / year				
(l)	CaCO3 for remineralization	Tons / year				
(m)	Hypochlorite for Post Chlorination	Tons / year				
(n)	NaOH for pH adjustment pre/post RO system	Tons / year				
(o)	Citric Acid for CIP	Tons / year				
(P)	HCl for CIP & Neutralization	Tons / year				
(q)	NaOH for CIP & Neutralization	Tons / year				
(t)	Any other Chemicals	Tons / year				
	Total Sum of Schedule 14 (to be carried to Schedule 9)					

\* Unit Rate includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.  
Chemical quantity shall not be more than the Functional Guarantee.

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Schedule 15: Manpower Cost during O&M Period

Item	Designation of Manpower during O&M Period	No. of Staff <sup>#</sup>	Basic Salary/ year (INR)	Other Benefits/year (INR)	Income Tax / year (INR)	Gross Salary (INR)*/Annum
A	B	C	D	E	F	G = D + E
1.	Plant Manager					
2.	Sr. Operation Manager					
3.	Operation Manager/ Shift-in-charge					
4.	Maintenance Incharge					
5.	Maintenance Personnel					
6.	SCADA Operator					
7.	Field Operator					
8.	Admin Staff					
9.	Chemist					
10.	Lab Assistant					
11.	Helpers					
12.	Safety Officer					
13.	Security Guards					
14.	Drivers					
15.	Gardener/Cafeteria cleaning					
16.	Any other staff					
17.						
18.	Total Sum of Schedule 15 (to be carried to Schedule 9)					

Note:

\* Total Price includes all taxes, benefits etc. to the staff.

# please refer minimum requirements for staffs and qualifications at Part-2 Clause 13.4.2 Operation and Maintenance

Signature of Bidder

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Schedule 16: List of Asset Replacement and Spare Parts Over 20 years

Item No.	ITEMS (Asset Replacement and Spare Parts Over 20 years)	Guaranteed Qty	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Unit Cost*	GST	Total Price F=C*(D+E)	Unit Cost*	Custom Duty	IGST	Total Price (J)=C*(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=C*(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
1.		1											
2.													
3.													
4.													
5.													
6.													
	Total Sum of Schedule 16												

\* Unit Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

Note: Total cost in this Schedule 16 shall be equal to the additional of Asset Replacement Costs of Schedule-9 over 20 years. Bidders may provide separate sheet for every year during O&M period of 20 years.

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Schedule 17: List of Membrane Replacement Over 20 years

Item No.	ITEMS	Guaranteed Qty	Total Price Local Currency (INR)			Total Price Foreign Currency (USD)				Total Price Foreign Currency (JPY)			
			Unit Cost*	GST	Total Price F=C*(D+E)	Unit Cost*	Custom Duty	IGST	Total Price (J)=C*(G+H+I)	Base Cost*	Custom Duty	IGST	Total Price N=C*(K+L+M)
A	B	C	D	E	F	G	H	I	J	K	L	M	N
1.	RO membrane (type -1)	1											
2.	RO membrane (type -2)												
3.	Micron Cartridge Filters												
4.													
5.													
6.	Total Sum of Schedule 17												

\* Unit Cost includes all costs including freight, port storage, insurance and stamps for delivery of items on the project site except GST, IGST and custom duty.

Note: Total Price in this Schedule 17 shall be equal to the addition of Membrane Replacement Costs of Schedule-9 over 20 years. Bidders may provide separate sheet for every year during O&M period of 20 years.

Signature of Bidder

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**Schedule 18: Payment Terms**

Payment Schedule shall be regulated as under:

All payment shall be done minus the retention money as per contractual provisions.

<b>Design and Engineering</b>		
<b>Sl. No.</b>	<b>Description</b>	<b>%age Payment</b>
1	Against submission of Drawing / document	30%
2	Against approved with comment category	20%
3	Against final approval	40%
4	Against completion of “As Built” drawings.	10%

<b>Intake Outfall Offshore Works</b>		
<b>Sl. No.</b>	<b>Description</b>	<b>%age Payment</b>
1	Supply of intake and outfall HDPE pipe, Heads and Diffusers at site	20%
2	Complete installation of pipeline, Heads and Diffusers. Payment based on progress achieved in laying of the pipeline on a pro-rata basis	60%
3	Completion of satisfactory Testing & Commissioning	15%
4	On successful Performance Test and issue of Commissioning Certificate.	5%

**Civil Works**

<b>Sl. No.</b>	<b>Description</b>	<b>%age Payment</b>
1	Supply of civil items and Completion of Sub-structure/piling/raft up to plinth level on pro-rata basis.	20%
2	Completion of super structure on pro-rata basis.	40%
3	Completion of allied items such as handrail, painting, epoxy coat etc. on pro-rata basis.	10%
4	Completion of satisfactory Testing & Commissioning	20%
5	On successful Performance Test and issue of Commissioning Certificate.	10%

This payment mode of payment of Civil Works will be applicable only for concrete works such as Tanks & Buildings but not for Road Works, Boundary Walls Works, Landscape works.

**Electro-Mechanical & ICA Equipment**

<b>Sl. No.</b>	<b>Description</b>	<b>%age Payment</b>
1	Receipt of material on site	60%
2	Completion of Erection on pro-rata basis.	10%
3	Completion of satisfactory Testing & Commissioning	20%
4	On successful Process Proving Test and issue of Commissioning Certificate.	10%

<b>Miscellaneous Works</b>		
<b>Sl. No.</b>	<b>Description</b>	<b>%age Payment</b>
1	Receipt of material on site	50%
2	Completion of Erection on pro-rata basis.	20%
3	Completion of satisfactory Testing & Commissioning	20%
4	On successful Process Proving Test and issue of Commissioning Certificate.	10%

<b>Process Proving</b>		
<b>Sl. No.</b>	<b>Description</b>	<b>%age Payment</b>
1	Successful completion of First Month	25%
2	Successful completion of Second Month	25%
3	Successful completion of Third Month	25%
4	On successful Process Proving Test and issue of Commissioning Certificate.	25%