

#### PANDIT DEENDAYAL PETROLEUM UNIVERSITY

Raisan village, Koba-Gandhinagar High-way, Gandhinagar – 382007, GUJARAT, INDIA

Tel. No: - +91-079-23275416 Fax No: - +91-079-23275030

#### **Tender Notice**

Sealed Tender bids are invited from reputed / authorized supplier/ manufacturer for supply installation and commissioning of the following items for Pandit Deendayal Petroleum University, Gandhinagar, so as to reach the undersigned at the address given below latest by the date and time specified here in below.

Tender No.	Lab. Name	EMD (Rs.)	Estimated Cost
PDPU/ORSP/COEWTM/Thermal RO/LC-RED/19-20/208	Center of Excellence in Water Treatment and Management	Rs. 49265.00	Rs. 4926500.00

Bid documents containing complete details, specifications, terms and conditions etc can be downloaded from the PDPU website <a href="http://www.pdpu.ac.in">http://www.pdpu.ac.in</a>. The download tender document (PDF Format) comprises:

Part – I : Tender Notice

Part – II : Technical Specifications (Schedule-'A')
Part – III : Commercial Terms & Conditions

The Technical Bids so received, shall be opened, on the date and time specified here in below at the Pandit Deendayal Petroleum University, Raisan Village, Gandhinagar in the presence of the bidders or their authorized representatives those wish to be present.

The Financial bids of only eligible Tenderer(s) shall be opened. The date and time of opening the financial bids shall be announced on our website after scrutiny of the Technical bids.

## **Important Dates:**

Last date and time for submission of Bid	27.04.2020 up to 5.00 p.m.
Opening of Technical Bid	30.04.2020 at 03.00 p.m.

#### **Important Instructions:**

- 1. The offer shall be submitted on downloaded tender document only.
- 2. The Main envelope should contain followed **four envelopes** duly sealed.
  - (a) **EMD Envelope:** This should contain Demand Draft (D.D) for EMD document in favour of Pandit Deendayal Petroleum University payable at Ahmedabad.

- (b) **Technical Bid**: Schedule-'A'
- (c) General Commercial Terms & Conditions
- (d) **Price Bid** : (Schedule 'B') should contain only Price Bid.

All the four envelopes should be super scribed with tender No., date of opening and Name of the bidder.

- 3. Offer without EMD is liable to be rejected forthwith.
- 4. The Tender, duly completed, should be sent by RPAD or Speed Post or Courier Service (Hand Delivery is not acceptable) so as to reach latest by the date and time specified here in above. Tender received after the due date and time is liable for rejection irrespective of delay due to postal service or any other reasons.
- 5. Any technical query, information clarification pertaining to this tender may be referred to **Dr. Anurag Mudgal (Project In charge- 9429026498, 0792327543; E-Mail: anurag.mudgal@sot.pdpu.ac.in)** Pandit Deendayal Petroleum University, Raisan village, Gandhinagar- Koba highway, Gandhinagar-382007 OR **purchase@pdpu.ac.in**

PDPU reserves right to reject any OR all tenders without assigning any reason.

Sd/-

Registrar Pandit Deendayal Petroleum University Raisan village, Koba-Gandhinagar High-way, Gandhinagar – 382007, GUJARAT, INDIA

PART-II

SCHEDULE-'A'

Details technical specification for: Thermal energy driven cascade Reverse Osmosis system

Sr. No	Complete Description of Item		Generic Specifications	Quantity Required	
1.		Solar collector for steam generation (with all arrangements & control fittings)	22-25 kg/ hr. of steam at 200°C and 12 bar pressure (Superheated steam)	As per size and specification	
2.	Biomass fired boiler (with all control fittings)		22-25 kg/ hr. of steam at 200°C and 12 bar pressure (Superheated Steam)	1	
3.	- Steam	Steam Turbine (Single Stage) (without alternator)	1 kW of Power Capacity without Alternator and operating at 190°C superheated steam and 10 bar Pressure.	1	
5.	Rankine Cycle	Condenser/Evaporator	The heat exchanger integrating SRC and ORC cycle with heat transfer rate of ~15 kW. (For more detail refer annexure-1 & 3)	1	
6.	Circulation Pump (DC Power)		Water recirculation Pump which flow rate of 22 kg/hr. pressure, not more than 1 bar.	1	
7.		Power Transmission Device	V-Belt Drive with Driven and Driving Pully and other arrangements. (Refer Annexure-3, Fig-4)	2	
8.	Organic Rankine Cycle	ORC Expander (without alternator)	1 kW of Power Capacity without Alternator and operating at 100°C superheated Vapour and 11 bar Pressure. Scroll Expander (E15H022A) form Air Squared is recommended. (Refer Annexure-3, Fig-5)	1	

9.		Refrigerant (Working Fluid)	R245fa	As per Requirement
10.		Refrigerant Pump with Frequency Inverter (DC Power)	Chemical pump with refrigerant flow rate of 0.2 m³/hr. with pressure up to 12 bar. The pump can variably speed control by frequency inverter.  (Hydra-cell G20 Diaphragm Pump is recommended)	1
11.		Refrigerant Storage Tank	Chemical Storage tank to store Refrigerant at 50°C and up to 4 bar pressure. (Size as per requirement)	1
12.		Condenser & Cooling System	The water-cooled condenser with 14 kW heat rejection capacity. (This includes condenser, cooling tower, water circulation pump and other necessary units) (for more detail refer annexure-1 & 3)	1
13.		RO Pump	High-Pressure Pump with Horizontal Shaft. The capacity of 2 m³/hr. and up to 10 bar pressure. (Procon 6-series 6 stainless steel pump is recommended)	2
14.	RO System	RO Module	LC-LE 4040, 4-inch Diameter with Feed Flow rate of 2 m <sup>3</sup> /hr. (Refer Annexure-3, Fig-6)	8
15.		Pressure Vessel  (With all Fitting arrangement of RO module)	40S30-4, 4-inch Diameter and 40-inch Length of 4 Membrane element can fit inside the Pressure Vessel. (Refer Annexure-3, Fig-7)	2

16.	Storage Tanks	<ol> <li>Raw Water Tank: 2500 Liter Capacity</li> <li>Permeate Water Tank: 2000 Liter Capacity</li> <li>Reject Water Tank: 1000 Liter Capacity</li> </ol>	3
18.	Valves and Sensors	Valve and Sensors as per Annexure-2 with full automation and data logger.	As Per Annexure-2
19.	Solar Panel	The solar panel can produce necessary power for all other units. Estimated power required Approx. 1.5 kW)	As per requirement
20.	Others (Piping, fabrication, maintenance and consultation fee from hired experts etc.)	-	(every year for 5 years)

Above table describes only major items and equipment. The supplier is required to understand the whole process by studying process description (Annexure-1 & 2) and attached drawings (Annexure 3). He will be responsible for integrating the unit in desired and operational mode by providing all-controlling and measurement gadgets. The supplier will be responsible for overall fabrication, commissioning and demonstration of the unit and will have to sign an MOU and guarantee of maintenance and modification suggested by experts from DST visiting time to time. He will remain associated with the project work for at least five years. The quotation should be all-inclusive of travelling, stay and other logistic expenses for the technician, manpower and tools etc.

## (ANNEXURE-1)

## Description of Thermal Energy driven Cascade - Reverse Osmosis System

(Dr Anurag Mudgal, Pandit Deendayal Petroleum University, Gandhinagar, Gujarat)

#### **Cascade - Reverse Osmosis Process:**

Fig.1 shows the main parts of the Cascade-RO System. The system consists of three primary cycles; (a) Steam Rankine Cycle, (b) Organic Rankine Cycle, & (c) Continuous recycling RO System. It is proposed to design a cascade type system for reverse osmosis.

The steam generates from a biomass boiler, or solar collector will expand into the steam turbine. The steam turbine produces shaft power to drive the high-pressure RO pump (by power transmission through belt drive). The amount of steam will discharge from the turbine, which condensed into the condenser. The amount of heat reject by steam Rankine cycle at condenser will recovered by ORC unit (as an evaporator). The bypass line from the steam drum will use to balance the energy (enthalpy) at the inlet of condenser. The condensed steam will recirculate to the boiler or/and solar collector.

The organic fluid in the ORC unit will pressurize at ORC pump. This fluid will be recovering the heat from evaporator (from steam condenser), which converts into vapour. This vapour will expand into the ORC expander and finally will condense into the condenser and store into the liquid receiving tank. As of steam Rankine cycle, the ORC expander also produces the shaft power to drive the High-Pressure RO pump.

The raw water from the tank-01 will pressurize and feed into the RO module by both High-pressure RO pumps which driven separately by the Steam Turbine & ORC Expander. The water from the recycling line will mix with the raw water line which will be the feed water for the RO module. The feedwater flow into the RO module will separate the permeate water and remaining will rejected from the module. The permeate water will collect into Permeate water tank-02. The reject (concentrate) water will be partially recycle (by-pass) to the raw water and remaining will reject from the System will collect into the Reject water tank-03.

The detail description of Cascade RO describes in three groups:

## 1. Steam Rankine Cycle:

Fig.1 shows the main parts of the Steam Rankine Cycle consisting of:

- 1. **Biomass Boiler**: The boiler should produce 22-25 kg/hr. of superheated steam of 200°C temperature and up to 12 bar pressure.
- 2. **Solar Collector**: The parabolic disc type of solar concentrator should produce 22-25 kg/hr. of superheated steam at 200°C temperature and up to 12 bar pressure.
- 3. **Steam Drum**: The superheated steam will be collected into steam drum at 200°C temperature and up to 12 bar pressure.
- 4. **Steam Turbine**: The steam turbine can produce 1 kW of shaft power at up to 3000 rpm. The steam flow of 15 kg/hr. with 190°C temperature and 10 bar pressure.
- 5. **Bypass-Line**: The by-pass steam from the steam drum will mix with the steam at the turbine discharge. The steam flow rate of 8 kg/hr. at 200°C temperature and 10 bar pressure.
- 6. **Power Transmission** (Belt Drive): The V-belt drive will use for power transmission. The driving shaft will rotate at approx. 2500 rpm by steam turbine while driven at 1400 rpm with power transmission of approx. 1 kW. (Refer annexure-3, Fig-4)

- 7. **Condenser/Evaporator**: The feed steam (a mixture of bypass steam and steam at turbine discharge) at a flow rate of 22-25 kg/hr. with 145°C and 4.5 bar pressure will condense. At another side, the organic fluid will be heated up to the superheated state (upto 100°C of temperature and 11 bar pressure). The condensate at the outlet will discharge from condenser.
- 8. **Circulation Pump**: The condensate will recirculate into biomass boiler or/and solar collector with the flow rate of 0.02 m<sup>3</sup>/hr. (0.33 Liter/min)
- 9. **Valves and Sensors**: The piping and instrumentation diagram for valves and sensors described in Annexure-2 & 3 (Refer fig-2)

#### **System Description:**

The biomass boiler or solar collector (Concentrator) will be heated the water at 200°C temperature and up to 11-12 bar pressure to make dry & superheated steam. The heat input of approx. 15 kW will consume by Boiler or/Solar collector to produce 22-25 kg/hr. of superheated steam. This superheated steam will collect into the steam drum. Now, the steam will use to expand into the steam turbine to produce approx. 1 kW of shaft power at 2500-3000 rpm. (Note: steam flow rate can control by steam regulating valve to adjust the power as well as the rotation speed of the turbine.)

The steam turbine will drive the high-pressure RO pump by power transmission system (belt drive) Approx. 11 kW of heat will be required to adjust 1 kW of power. At steam turbine outlet the saturated steam at approx. 120°C of temperature and 1 bar gauge pressure will discharge.

The steam from the bypass line will mix with the turbine discharge steam to adjust energy balance of the condenser. (Note: the condenser of the steam Rankine cycle is the evaporator of organic Rankine cycle.) Amount of heat reject by steam from the condenser will recover by the working fluid of ORC. (Heat reject=Heat Gain)

Therefore, the net feed steam of 22 kg/hr. at  $144^{\circ}$ C temperature and 4.5 bar pressure will condense up to  $50^{\circ}$ C temperature and 1 bar gauge pressure. At another side, the organic fluid at the flow rate of  $0.20 \text{ m}^3$ /hr. at  $49^{\circ}$ C temperature and up to 11 bar pressure will flow into the condenser (evaporator). At the exit of the evaporator, the superheated vapour at approx.  $100^{\circ}$ C and 11 bar pressure will exist.

At the exit of steam condenser, the condensate at 0.02 m<sup>3</sup>/hr. will be recirculated into the boiler or/and solar collector. (the make-up water line will use to make-up water into the system).

## 2. Organic Rankine Cycle:

Fig.1 shows the main parts of the Organic Rankine Cycle consisting of:

- 1. **Working Fluid**: The R245fa (1,1,1,3,3 Pentafluoropropane CF<sub>3</sub>-CH<sub>2</sub>-CHF<sub>2</sub>) will use as working fluid of ORC unit.
- 2. **Liquid Receiving Tank**: The refrigerant from the condenser will store into the receiving tank and supply into the system as per requirement by the regulator.
- 3. **ORC Pump**: Liquid working fluid form tank at  $0.2 \text{ m}^3/\text{hr}$ . of flow rate will pressurize up to 12 bar at  $\sim 50^{\circ}\text{C}$  temperature.
- 4. **Evaporator/Condenser**: The pressurized liquid will evaporate up to 100°C temperature and 11 bar pressure by heat gain from the steam condenser (at another side).
- 5. **ORC Expander**: The Scroll type positive displacement expander will use for the ORC system. The expander can produce 1 kW of shaft power at up to 3000 rpm. Vapour flow (inlet of expander) of 4.2 m<sup>3</sup>/hr. with 100°C temperature and 11 bar gauge pressure. (Refer Annexure-3, Fig-5)

- 6. **Power Transmission System (Belt Drive)**: The V-belt drive will use for power transmission. The driving shaft will rotate at approx. 2500 rpm by ORC expander while driven at 1400 rpm with power transmission of approx. 1 kW. (Refer Annexure-3, Fig-4)
- 7. **Condenser & Cooling System**: The superheated vapour from expander discharge at a flow rate of 245kg/hr. with 72°C temperature and 3.3 bar pressure will condense up to 48°C, and up to 3.2 bar pressure will store (collect) into the liquid receiving tank. Water will circulate as a cold side (as a cooling medium) with a mass flow rate of 780 kg/hr. with the inlet of 25°C temperature and 1 atm bar pressure.

#### **System Description:**

The working fluid (R245fa) will pressurize up to 11 bar gauge pressure at the flow rate of  $0.2 \, \mathrm{m}^3/\mathrm{hr}$ . from liquid receiving tank. The pressurized fluid will be heated from evaporator up to superheated vapour stage of  $100\,^{\circ}\mathrm{C}$  temperature and 11 bar gauge pressure. This superheated vapour will expand up to  $72\,^{\circ}\mathrm{C}$  and 3.3 bar gauge pressure. The steam at expander discharge will condense and store (collect) into the liquid receiving tank.

The ORC expander with a capacity of 1 kW of shaft power with the rotation speed of 2500-3000 rpm will drive the high-pressure RO pump shaft by power transmission system (Belt Drive).

The frequency inverter will use to control the mass flow rate of working fluid to adjust the power and rotational speed of expander.

(Note: the scroll type positive displacement expander will be recommended for the ORC unit).

## 3. Continuous Recycling Reverse Osmosis Recycling Process:

Fig.2 shows the main parts of the Continuous Recycling-RO design consisting of:

- **1. RO Module**: A standard pressure vessel of dimensions 4" diameter consist of 4 number of spiral wound membrane (LC-LE-4040-4") (Refer Annexure-3, Fig-6).
- **2. Pressure Vessel**: A pressure vessel of specification 40S30-4, total length 168 inch and diameter 4 inch which can include four (4) elements inside the pressure vessel. (Refer Annexure-3, Fig-7)
- **3. High-Pressure Pump**: A positive displacement pump driven by a steam turbine/ORC expander with the flow range of 2-2.5 m<sup>3</sup>/hr. & pressure range up to 10 bar.
- 4. Flow Lines:
  - Raw Water Line: The Raw water from storage tank.
  - **Recycling Line:** The by-pass from the reject line will mix with the raw water line (70-80%).
  - **Feed Flow Line:** The mixture of raw water & reject water from recycling line will feed to RO Module.
  - **Permeate Flow Line:** The permeate water from RO Module.
  - **Reject Line:** The Concentrate (Reject) water from RO Module will partially (70-80%) by-passed and remaining will reject from the system.
- 5. Storage Tanks:
  - Raw Water Tank-01: The tank contains pre-treated raw water from borewell or other sources.
  - **Permeate Water Tank-02**: The tank contains the permeate water from RO Module will distribute to drinking purpose.
  - **Reject Water Tank-03**: The tank contains Reject from RO Module will distribute for post-treatment.

- **6. Sensors**: (Refer Annexure-3, Fig. 2 & 3)
  - **Pressure Gauge**: To measure the pressure intensity of feed water.
  - Flow Meter-01: To measure the feed flow rate of water.
  - **Flow Meter-02**: To measure the permeate flow rate of water.
  - **Flow Meter-03**: measure the recycle flow rate of water.
  - **TDS Meter-01**: To measure the feedwater TDS.
  - **TDS Meter-02**: To measure the permeate water TDS.
  - **TDS Meter-03**: To measure reject water TDS.
- 7. Valves: (Refer Annexure-3, Fig. 2 & 3)
  - Non-Return Valve: NRV at RO Module inlet to restrict backflow from RO system.
  - **Recovery Controller**: The Valve can adjust the recovery rate of RO Module.
  - **Recycle Controller**: The valve can adjust the By-Pass flow to recycle loop.

#### **System Description:**

The Raw water will collect from the borewell or other source (pre-treated water) into the raw water tank-01. The high-pressure RO pump which driven by the steam turbine/ORC expander will pressurize the water at a flow rate of 2  $\,$ m $^3$ /hr. with 9 bar gauge pressure from raw water tank-01. The RO pump of capacity 1 kW shaft power at a rotation speed of max. 1725 rpm will use for the RO system. (The Steam Turbine/ ORC expander rotation with 2500-3000 rpm which reduced up to 1400 rpm for RO pump by enlarging driven pulley of belt drive.) (Refer fig-4)

The Recycle water (bypass reject water) line will connect with the raw water line to mixing the water will be the feed water of the RO Module. (Note: the bypass line or recycle water line will connect before the RO pump).

This system for raw water TDS up to 1000 ppm, which increase up to 3000 ppm by mixing of recycling water. Therefore for 3000 ppm water required 9 bar gauge pressure for 2  $m^3/hr$ . of feedwater flow rate to the succession of the cycle. The raw water flow rate at 1.2  $m^3/hr$ . and remaining amount of 0.8  $m^3/hr$ . water will mix with recycling water line.

The pressurized feedwater flows into the RO module. The RO module consists of 4" diameter pressure vessel with 4 Spiral wound RO elements (LC LE-4040) of each having 4" diameter and 40" length.

The permeate will separate from the feed water ( $\sim 1~\text{m}^3/\text{hr.}$ ), and remaining concentrate (reject) ( $\sim 1~\text{m}^3/\text{hr.}$ ) water will discharge from the RO Module. The permeate water will collect into the Permeate water tank-02. And concentrate (reject) will collect into the Reject water tank-03 in which partial flow will bypass (recycled) to the raw water line.

This system design for high recovery rate up to 83.33%. The RO module recovery (pass recovery) should be 50% while 80% of reject water will recycle into the system. The recovery controller valve can use to control the recovery rate of RO Module and recycling valve can use to control the recycle flow of water.

(Note: there are two RO system is design with same size and specification in which RO System-1 for Steam Rankine cycle and RO system-2 for Organic Rankine cycle)

(Note: RO pump should be positive displacement and horizontal shaft which rotating up to 1725 rpm, **the Procon 6-series 6 stainless steel pump is recommended for RO system**). (Note: solar panel will used for other pumps and instruments)

<u>(ANNEXURE-2)</u>
Table-1: Sensors specification

	Description Description	Signal type	Range and units	
P01	Pressure Gauge (At Boiler)	AN/DG	0-25 bar	
P02	Pressure Gauge (At Solar Collector)	AN/DG	0-25 bar	
P03	Pressure Gauge (At Steam Drum)	AN/DG	0-25 bar	
P04	Pressure Gauge (At Steam Turbine Inlet)	AN/DG	0-25 bar	
P05	Pressure Gauge (At Steam Turbine Discharge)	AN/DG	0-16 bar	
P06	Pressure Gauge (At Condenser Inlet after Mixing)	AN/DG	0-16 bar	
P07	Pressure Gauge (At Condenser outlet)	AN/DG	0-6 bar	
P08	Pressure Gauge (At ORC Pump Discharge/Evaporator Inlet)	AN/DG	0-25 bar	
P09	Pressure Gauge (At ORC Expander Inlet)	AN/DG	0-25 bar	
P10	Pressure Gauge (At ORC Expander Discharge)	AN/DG	0-16 bar	
P11	Pressure Gauge (At ORC Condenser Discharge)	AN/DG	0-6 bar	
P12	Pressure Gauge (At RO Module-1 Inlet)	AN/DG	0-16 bar	
P13	Pressure Gauge (At RO Module-2 Inlet)	AN/DG	0-16 bar	
T01	Temperature Sensor (At Boiler)	DG	0-300 °C	
T02	Temperature Sensor (At Solar Collector)	DG	0-300 °C	
T03	Temperature Sensor (At Steam Drum)	DG	0-300 °C	
T04	Temperature Sensor (At Steam Turbine Inlet)	DG	0-300 °C	
T05	Temperature Sensor (At Steam Turbine Discharge)	DG	0-300 °C	
Т06	Temperature Sensor (At Condenser Inlet after Mixing))	DG	0-300 °C	
T07	Temperature Sensor (At Condenser outlet)	DG	0-200 °C	
Т08	Temperature Sensor (At ORC Pump Discharge/Evaporator Inlet)	DG	0-200 °C	
T09	Temperature Sensor (At ORC Expander Inlet)	DG	0-200 °C	
T10	Temperature Sensor (At ORC Expander Discharge)	DG	0-200 °C	
T11	Temperature Sensor (At ORC Condenser Discharge)	DG	0-200 °C	
FI01	Frequency Inverter (At ORC Pump)	-	As Per Requirement	
TM01	Tacho Meter (At Steam Turbine)	DG	0-9999 RPM	
TM02	Tacho Meter (At ORC Expander)	DG	0-9999 RPM	
C01	Triple Probe In-line TDS Meter			
C02	(1. Feed Line) (2. Permeate Line)	DG	0-9990 ppm	
C03	(3. Reject Line)  Triple Probe In-line TDS Meter  (1. Food Line)			
C05			0-9990 ppm	

F01	Flow Sensor (At RO Module-1 Inlet)	DG	0-45 Litre/Min
F02	Flow Sensor (At RO Module-1 Outlet) (Permeate)	DG	0-30 Litre/Min
F03	Flow Sensor (At RO Module-1) (At Recycling)	DG	0-30 Litre/Min
F04	Flow Sensor (At RO Module-2 inlet)	DG	0-45 Litre/Min
F05	Flow Sensor (At RO Module-2 Outlet) (Permeate)		0-30 Litre/Min
F06	Flow Sensor (At Ro Moduloe-2) (At Recycling)		0-30 Litre/Min
WLA01	Water Level Alarm (At Raw Water Tank-T01)	-	-
WLA02	2 Water Level Alarm (At Permeate Water Tank-T02)		-
WLA03	Water Level Alarm (At Reject Water Tank-T03)	-	-

## Nomenclature:

AN : Analogue

C : Conductivity (TDS)

DG : Digital F : Flow

FI : Frequency Invertor

P : Pressure
T : Temperature
WLA : Water Level Alarm

**Table-2: Valves Specification** 

Tag name	Description	Range and units
V01	Valve (At make-up water line)	
V02	Valve (At Solar Collector inlet line)	
V03	Valve (At boiler inlet line)	
V04	Valve (At Boiler outlet line)	
V05	Valve (At Solar Collector outlet line)	
V06	Valve (At Steam Drum condensate discharge line)	
V07	Valve (At By-Pass steam line)	
V08	Valve (At Steam Turbine inlet line)	
V09	Valve (At Condenser outlet line)	
V10	Valve (At after Liquid Storage Tank-ORC)	
V11	Valve (At Cooling water line – Cooling Tower)	
V12	Valve (At RO Module-1 outlet) (Recovery Controller)	1"
V13	Valve (At RO Module-1 outlet) (Reject)	1"
V14	Valve (At RO Module-2 outlet) (Recovery Controller)	1"
V015	Valve (At RO Module-2 outlet) (Reject)	1"
NRV01	Non-Return Valve (At RO Module-1 inlet)	1"
NRV02	Non-Return Valve (At RO Module-2 inlet)	1"

## (ANNEXURE-3)

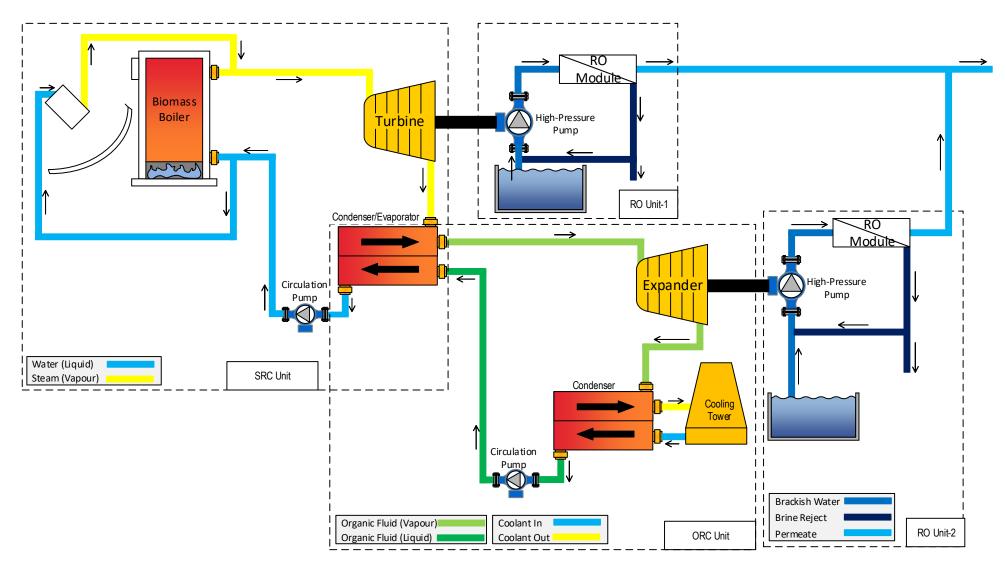


Fig 1: Working Diagram of Cascade-RO.

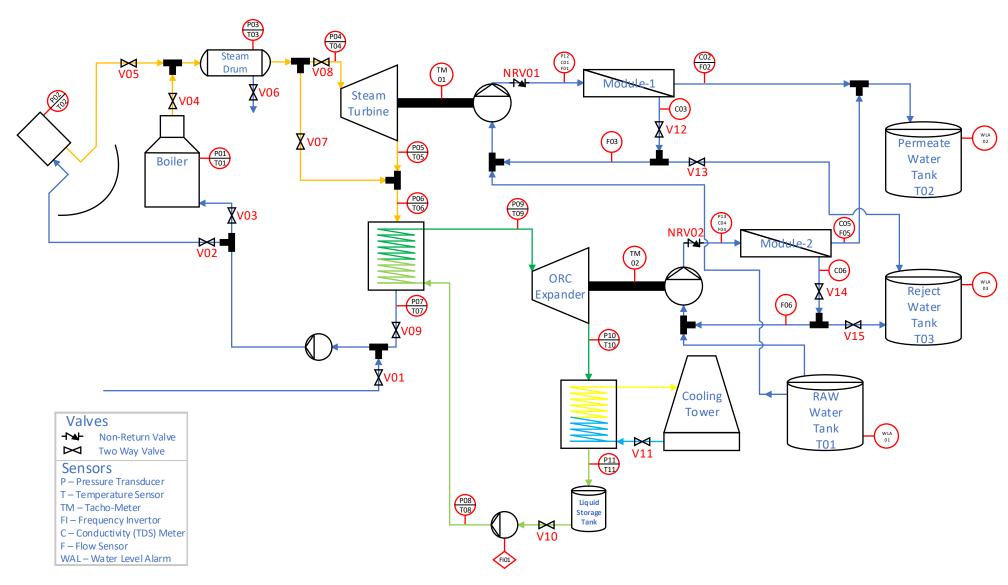


Fig 2: P&ID of Cascade-RO.

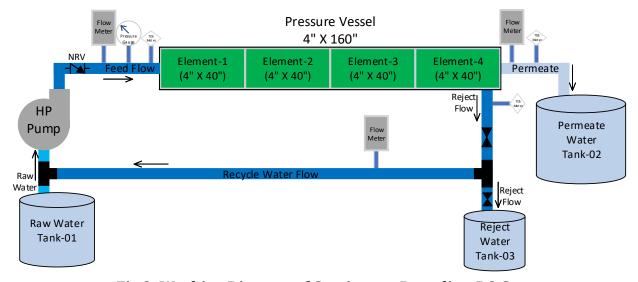


Fig 3: Working Diagram of Continuous Recycling-RO System.

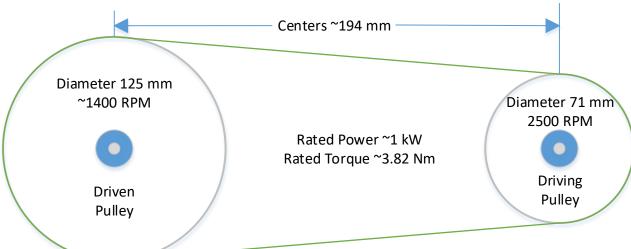


Fig 4: Power transmission (Belt Drive) layout

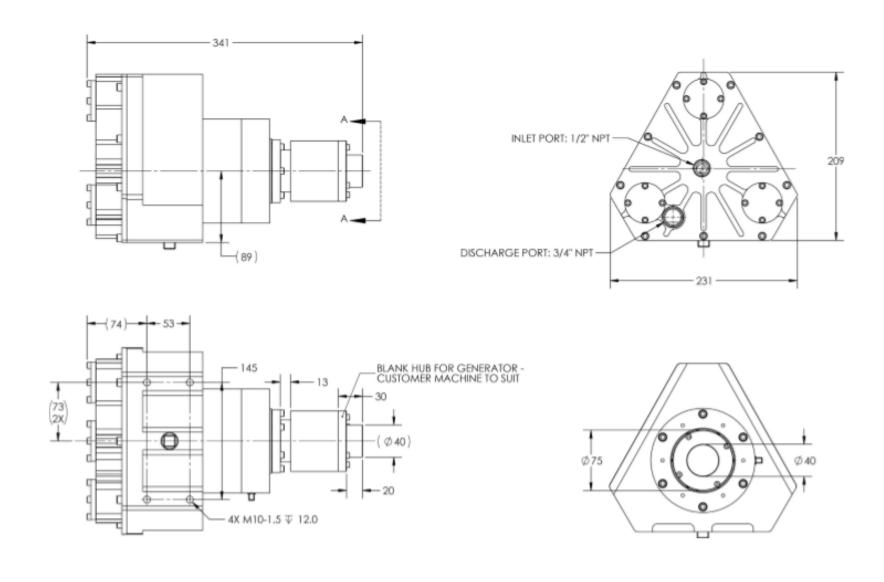


Fig 5: Drawing of Scroll Expander (ORC Expander-1 kW)

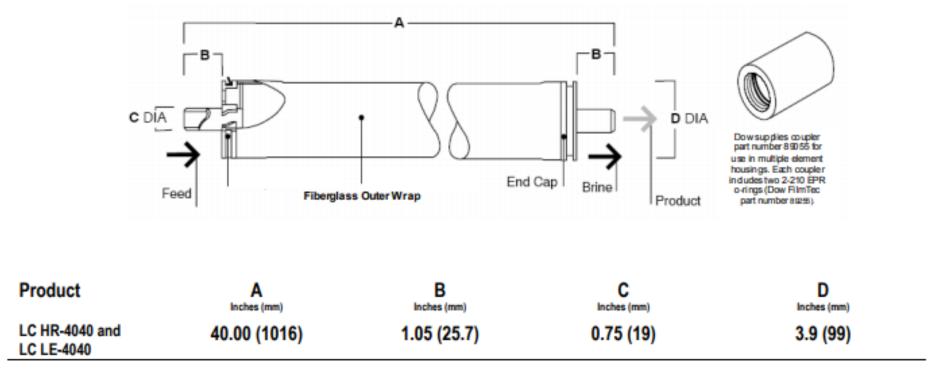


Fig 6: Drawing of RO Membrane (1-RO element)

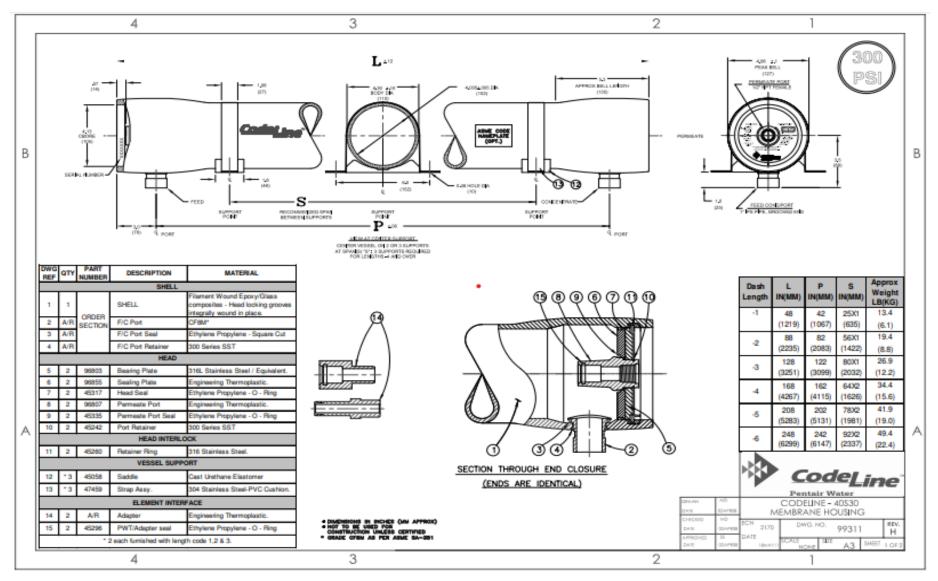


Fig 7: Drawing of Pressure Vessel (For 4-RO Elements)

#### **PART-III**

#### **GENERAL COMMERCIAL TERMS AND CONDITIONS**

#### **DEFINATIONS:**

- Tenderer/Supplier/Bidder: These terms are synonym and mean the firm who intends or who has submitted offer in response to this tender.
- Tender / Bid Document: means this tender document.
- PDPU: Pandit Deendayal Petroleum University having it office at Raisan Village, Gandhinagar-382007 and includes it's successors and assignee.
- 1 The tenderer should thoroughly read all the clauses of the tender document before submitting the duly filled in Tender.

Tenderer shall place the following **ANNEXURES** as **FIRST EIGHT pages** of their Technical Bid in the following sequence.

FIRST PAGE	ANNEXURE -1
SECOND PAGE	ANNEXURE - 2
THIRD PAGE	ANNEXURE - 3
FOURTH PAGE	ANNEXURE - 4
FIFTH PAGE	ANNEXURE - 5
SIXTH PAGE	ANNEXURE – 6
SEVENTH PAGE	ANNEXURE – 7
EIGHTH PAGE	ANNEXURE – 8

## 1 SUBMISSION OF BID DOCUMENT:

PDPU follows two bid systems. Tenderer shall submit two separate bids viz.

- a) Techno Commercial Bid (Technical Bid) and
- b) Price Bid as under.
  - (a) Technical Bid: This shall be in sealed envelope. It shall be super scribed

Technical Bid: Tender No.	Name of Bidder:	
1 centificat Blat 1 chact 110.	nume of Bludell	

#### It shall contain the following

(i) six pages as mentioned in condition 1 above and

#### TENDERERS SHOULD FURNISH THE FOLLOWING DETAILS:

- [1] Technical Specifications (Part-II) and General Term & Conditions (Part –III) of Tender Document Duly Sign on each page by Authorized Signatory as token of his acceptance.
- [2] Audited Accounts of last three years of the firm.
- [3] Performance reports if any.
- [4] Consent letter from their principals to manufacture such items.
- [5] All the testing equipment MUST have been calibrated up to date.
- [6] List of customers

- (ii) All the information and supporting documents for (i) above
- (iii) Details, Documents, Literature, certificates etc. for the equipment / Material offered.

#### (b) Price Bid: This shall be in sealed envelope.

It shall contain offer price in the form specified in the tender document as Schedule-'B'. The Printed Price list or price in different format will render the offer liable for rejection. **It shall be super –scribed as:** 

Price Bid: Tender No.: Name of Bidder:

c) EMD Envelope: This envelop shall contain the following:

Demand draft or Bank Guarantee, as the case may be, for EMD supporting document, as mentioned hereof, if bidder seeks exemption in EMD **It shall be super – scribed as :** 

EMD Envelop: Tender No.: Name of Bidder:

## d) Main Envelope: This envelope shall contain envelop of Technical bid, envelop of EMD and Price Bid. It shall be super – scribed as:

Main Envelop:	Tender No.:	Name of Bidder:	
Maill Ellyclop.	i ciiuci ivo	Name of bluder.	

The entire bid document (Main envelope mentioned above) should be submitted so as to reach this office not later than 02.00 P.M. on due Date as specified in the tender notice through RPAD / Speed post or Courier only

Incomplete bids and amendments and additions to bids after opening of the bids will be ignored out rightly.

The technical scrutiny committee of PDPU shall evaluate the techno-commercial view of the tender. PDPU reserves the right to open or not to open the price bid of the bidders on the basis of their past performance of their supplied materials.

The price bid of those who are techno-commercially acceptable shall only be opened.

#### **3 PRICE EVALUATION:**

Normally no price preference shall be given on any account. All tenders will be evaluated on firm price end-cost basis; The parties however shall give the detailed break-up of the end cost. If PDPU feels that there is lack of serious competition or for any other reasons, PDPU may negotiate with the bidder. PDPU's decision to accept any or all tenders shall be final and binding on all the parties. However, the DG of PDPU or the Authorized committee at its sole discretion reserves the right to negotiate with other tenderer in case the technical specification of some or all products are found to be superior.

### 4 EARNEST MONEY DEPOSIT: (E.M.D.)

E.M.D. is payable @1% of the value of the items offered. The EMD is payable by Demand Draft, of any Nationalized Banks, drawn in favor of the PANDIT DEENDAYAL PETROLEUM UNIVERSITY, payable at Ahmedabad. If the amount of EMD is more than Rs. 25000/- the same can be paid by an irrecoverable Bank Guarantee from any nationalized Bank in a standard format prescribed by PDPU (Format given in this tender document).

#### 5 DELAYED AND LATE TENDERS:

No Tender shall be accepted / opened in any case which are received after due date and time of the receipt of tender irrespective of delay due to postal services or any other reasons and PDPU shall not assume any responsibility for late receipt of tender. Any correspondence in this matter will not be entertained.

#### 6 PRICES:

The details of the price shall be given in Price Bid (Schedule-B) only and nowhere else. Prices quoted shall be FIRM and on F.O.R. Destination basis (i.e. PDPU,Gandhinagar). However, the Tenderer should indicate in the Price Bid, the break-up of Unit F.O.R. Destination Prices with break-up of Unit Ex-works price ,Excise duty, VAT/Sales Tax, Custom Duty, average freight, packing charges, and Insurance Charges. Tenderer should quote the Freight as well as Insurance Charges both separately as shown in price bid. Please note that payment of excise duty will be made only on Ex-Work prices. Also, please mention rate of Excise duty. If this is not specifically mentioned then PDPU will have the option to take the prices as exclusive of taxes and duties (at maximum slab rates) for the evaluation of the tenders.

The Tenderer should invariably indicate the total unit end cost price considering all their costs / calculations in the Price bid itself for each item and all sub-items if any. This is mandatory. Cost components hidden / furnished elsewhere will not be considered and will be ignored out-rightly.

#### **Only for Traders - Tender:**

[i] In case of a trader-**tender**, if the quotation is furnished for all-inclusive rates and the rates of taxes and duties are indicated without indicating the amount, in such cases, the **price** is eligible for statutory variation.

[ii] Where the trader-**tender** quotes all-inclusive rates without indicating the rate of Taxes and Duties included in the quoted price, the price is not eligible for any statutory variation.

#### 7 REFUND / FORFIETURE OF E.M.D

EMD will be forfeited if (i) the tender, it covers, is withdrawn during the validity of the offer or (ii) the Tenderer fails to furnish / deposit the Performance Guarantee towards Execution Period (security deposit).

EMD of the unsuccessful tenderer's will be returned without intimation within 60 days of placing of the order to the successful Tenderer subject to the unsuccessful bidder returning the original receipt of the EMD together with the advance stamped receipt, to the Accounts Officer of PDPU.

EMD will be returned to the successful bidders, only on their submission of performance guarantee towards execution period against order released to them.

## 8 PERFORMANCE GUARANTEE (PG) TOWARDS EXECUTION PERIOD: (i.e. SECURITY DEPOSIT):

Successful tenderers will be required to pay an amount equivalent to 10% (Ten) of the value of the purchase order as Performance Guarantee (Security Deposit) within 10 days from the date of the purchase order failing which the purchase order is liable to be cancelled at the cost and the risk of the successful Tenderer (at the discretion of PDPU).

n be paid by Demand Draft drawn in favour of PANDIT DEENDAYAL PETROLEUM UNIVERSITY payable at Ahmedabad or in the form of Bank Guarantee from Nationalized Bank if the amount is more than Rs.35,000/-.

The Bank Guarantee will be executed on the standard form prescribed by PDPU as APENDIX - I.

The Bank Guarantee so furnished should have clear one time validity till the completion of the order in all respects. Bank Guarantee for Interim period will not be acceptable. If by any reasons the supply period is extended then the supplier shall undertake to renew the Bank Guarantee at least one month before the expiry of the validity failing which PDPU will be free to encash the same.

The successful bidder/s shall have also to furnish PG (as specified here of) for the contract value towards warranty / guarantee period separately as applicable as per tender conditions.

Performance Guarantee towards Execution Period (Security Deposit) will be returned on successful completion of the Order and only after the Performance Guarantee towards warrantee/guarantee, as mentioned above, is submitted.

#### 9 VALIDITY OF THE OFFERS:

The offers shall to be kept valid for a period of 120 days from the date of opening of technical bids. In case the finalization of the tender is likely to be delayed, the tenderers will be asked to extend the same without change in the prices or any terms and conditions of the offer. If any change is made, original or during the extended validity period, the offers will be liable for outright rejection without entering into further correspondence in this regard and no reference will also be made.

### 10 TRUCK RECEIPT (T.R) / AIRWAY BILL (A.B)

All the Goods should be dispatched freight paid and the A.B / T.R should be forwarded directly to PDPU Office at Raisan Village, Gandhinagar. The demurrage charges, if any, paid by the PDPU due to delay in informing PDPU or any other reason attributable to supplier, will be deducted from his bill. It is essential that packing notes and invoices are furnished in respect of every consignment.

The supplier will be responsible for any damages / shortage claim rejected by the respective Authorities for want of a clear A.B / T.R.

Materials may be dispatched by any convenient mode of transport and up to PDPU i.e. F.O.R Destination.

#### 11 PACKING AND FORWARDING CHARGES:

The prices shall be inclusive of packing & forwarding charges. The Materials should be strongly and adequately packed to ensure safe arrival at destination. The materials dispatched from overseas by Air / Shipping should be packed such that it can withstand rough handling and possible corrosion due to exposure to salt laden atmosphere, salt spray or open storage. All packing must be clearly marked with order Number and consignee's name and address.

#### 12 TRANSIT INSURANCE:

All the materials will be required to be supplied up to Destination against all transit risks, such as damage, loss, theft, fire, etc. The insurance period shall cover 15 days after the date of receipt of materials at site to enable PDPU to check up stores fully. The suppliers will be responsible for free replacement of such stores which have been received short, damaged or broken within 15 days.

The cost of damaged, defective stores materials will however be deducted from the bills of the suppliers and will be refunded only after replacement thereof. It will be the responsibility of the supplier to lodge claim against the insurance on receiving necessary advice from PDPU.

#### **13 ACCEPTANCE OF STORES:**

The equipments/ materials to be supplied against this tender are subject to their acceptance by PDPU or any other Officer deputed for this purpose.

#### **14 UNLOADING:**

Unless specified otherwise in the purchase order, Unloading of the materials shall be arranged by PDPU.

#### **15 STATUTORY VARIATION:**

Any statutory increase or decrease in the taxes and duties subsequent to the offer under this tender if it takes place within the original contractual delivery date will be to PDPU account subject to the claim being supported by documentary evidence. No increase due to such variation shall be allowed for the portion of the delivery after the original contractual delivery date. However, if any decrease takes place after the contractual delivery date, the advantage will have to be passed on to PDPU.

#### **16 PAYMENT TERMS:**

#### A. In case of Domestic(i.e. Indian) Supplier the payment Terms as Under:-

- 70% of Payment only after proper verification of the delivered equipments by the vender.
- Remaining 30% Payment of invoice value within one month on successful installation, Commissioning and training.
- 100 % through Wire Transfer within 5 (five) Working Days after the date of Successful Commissioning and Installation of the System.

#### B. In case of Foreign Supplier the Payment Terms is as Under:-

- 90 % payment through Irrevocable Letter of Credit.
- 10 % payment through Wire Transfer within 5 (five) Working Days after the date of Successful Commissioning and Installation of the System.

#### OR

- 90% payment will be released through wire Transfer within 5 (five) Working Days after receipt of the material.
- 10% payment will be released through Wire Transfer within 5 (five) Working Days after the date of Successful Commissioning and Installation of the System.
   OR
- 100 % through Wire Transfer within 5 (five) Working Days after the date of Successful Commissioning and Installation of the System.
- **Installation:** The PDPU will be responsible to prepare the site for installation of equipment. The vendor has to arrange for technician, other manpower, tools etc for installation and commissioning of the goods supplied by him.

### 17 REPEAT/ADDITIONAL ORDERS:

PDPU reserves the right to place repeat order / additional order on the successful tenderers up to 25% of the original quantity of the P O at the same prices, terms and conditions stipulated in the original contract during three months from the date of Purchase Order.

#### **18 DELIVERY PERIOD:**

The Tenderers will have to quote a firm delivery period subject to the force Majeure conditions as accepted by PDPU. Tenderer should mention their delivery period. Time being the essence of this tender, delivery period shall be strictly adhered to. Delay in execution of order on account of any reasons will be subject to levy of penalty.

#### 19 PENALTY FOR LATE DELIVERY:

In case, the materials are not delivered within the period stipulated in the order, penalty shall be levied at  $\frac{1}{2}$ % per week on the prices (End cost excluding taxes) subject to maximum 10% reckoned on the value of late delivered supplies.

Due consideration will be given to waive levy of penalty for the reasons absolutely beyond suppliers control for which documentary evidence will have to be provided. The request for extension in delivery giving reasons and supporting documents shall have to be made available within one month on completion of the supply, and no request to waive levy of penalty will be entertained / reviewed during the execution of order.

#### **20 EXTENSION IN CONTRACTUAL DELIVERY DATE:**

It will be supplier's responsibility to ensure that goods are delivered within the stipulated delivery period. However, if PDPU may consider extension of delivery period with or without statutory variations, for the reasons beyond the control of the tenderer and subject to the Penalty as mention hereof.

Such extension will be subject to the following conditions.

- [a] No increase in price on account of any statutory increase in or fresh imposition of customs duty, excise duty, sales tax or on account of any other tax or duty shall be admissible on the material delivered after the original contractual delivery date.
- [b] Notwithstanding any stipulation in the contract for increase in price on any other ground, no such increase which has become effective on or after the contractual delivery date shall be admissible on material delivered after the original contractual delivery date.
- [c] Nevertheless, PDPU shall be entitled to the benefit of any decrease in price on account of reduction in or remission of customs duty, excise duty, sales tax or on account of any other tax or duty or on any other ground as stipulated in the P.O., which takes place on or after the contractual delivery date of the said P.O. for the material delivered after the original contractual delivery date.

#### 21 REPLACEMENTS OF GOODS BROKEN, DAMAGED OR SHORT:

In the event of any material or part thereof found broken or damaged or received short during transit or during installation or Commissioning or testing at site, before commissioning in service the suppliers shall replace the same free of cost. However, PDPU will recover amount equivalent to the cost of such damaged / broken / short supplied materials and will repay when actual replacement is given.

#### 22 POST TENDER CORRESPONDENCE / ENQUIRIES:

The Tenderer will refrain from pursuing / canvassing the matter, directly or indirectly with any Office of PDPU as otherwise the same would amount to disqualification of the tender.

- PDPU shall have the right to make any changes, additions / deletions or modifications in any terms / conditions or quantity of the tender and / or specifications as may be deemed necessary by PDPU at its sole discretion at any time before the due date of opening of the tender.
- 24 PDPU does not accept the printed conditions of any Tenderer. It will be ignored without any reference; hence tenderers should withdraw such printed conditions if they have any. PDPU shall accept only unconditional tender.
- If technical deviations furnished by the Tenderer are not agreeable to PDPU, the offers may be ignored. However it will be solely at discretion of PDPU to consider the technical deviations OR not for considering the Tenderer. No correspondences of the Tenderer will be entertained in this matter.

- Please indicate whether the goods offered are first sale or second sale so as to determine the payment of sales tax.
- Revision of prices or any commercial terms affecting the price after opening of technical bids shall not be considered and will be ignored.
- **28** Tenderers shall indicate the name of their partners of their manufacturing firm.
- Tenderer should specifically mention in the offers the name of the Partners / Proprietor / Directors who is / are the signing authority.

#### **30 GUARANTEE:**

If the goods, stores and equipments found defective due to bad design or workmanship the same should be repaired or replaced by the tenderer free of charge if reported within 18 months of their receipt at site or 12 months from the date of commissioning of equipments whichever is earlier. Tenderer will be responsible for the proper performance of the equipments / materials for the respective guarantee period.

#### 31 APPROVAL:

The goods shall be subject to the approval of PDPU after receipt of the Material at site.

**32** PDPU would prefer the offers from manufacturers directly. All the manufacturers should quote for those items, which are actually manufactured at / rolled by their plants. This should be strictly adhered.

PDPU reserves the right to inspect, suppliers factory at any time during the currency of the contract in case order is placed on supplier and also to inspect manufactured material before testing / packing / dispatch.

If in any company, the interest of any employee of the PDPU. or his relative as defined in Section VI of the Company's Act. 1956, is 10% or more, PDPU will not deal with such company at all. Tenderer therefore, must specifically disclose this fact in his technical Bid. Non-disclosure of such facts would disqualify the Tenderer for further dealing with PDPU.

#### **34 TERMINATION OF CONTRACT:**

In case, the supplier fails to deliver the stores / materials / equipments or any consignment thereof within contractual period of delivery or in case the stores are found not in accordance with prescribed specification and/or the approved sample, PDPU shall exercise its discretionary power as under:

[a] To recover, from the supplier as agreed, by way of penalty clause above,

or

[b] To purchase from elsewhere, after giving notice of 15 days to the supplier, on his account and his risk

or

[c] To cancel the contract.

or

[d] PDPU at any time terminate the contract by giving written notice to the qualified Bidders/Tenderer without compensation to the qualified tenderer, if he become bankrupt or otherwise, insolvent or in case of dissolution of firm or winding up of company provided that such termination will not prejudice or effect any right of action or remedy which has thereafter to the University.

In the event of the risk purchase of stores of similar description, the opinion of PDPU shall be final. In the event of action taken under clause (a) or (b) above, the supplier shall be liable to pay for any loss which PDPU may sustain on this account

Further, "PDPU" reserves the right to terminate the Contract (i.e. Purchase order) at any time, without assigning any reasons, whatsoever, by giving a notice or not less than period of ONE month. Suppliers will not be entitled for any compensations / damages / losses, refund by PG whatsoever, on account of such termination of the Contract."

#### 35 ARBITRATION:

All questions, disputes or differences whatsoever which may at any time arise between the parties to this agreement touching the agreement or subject matter thereof, arising out of or in relation to there and whether as to construction or otherwise shall be referred to the decision of the Sole Arbitrator, appointed by the PDPU, for that purpose, who shall be a retired High Court Judge or retired District and Sessions Judge, and the decision of the said Arbitrator shall be final and binding upon the parties. Reference to the arbitration shall be governed by the provisions of Indian Arbitration & Conciliation Act. 1996 as amended from time to time and the rules made there under.

#### **36 JURISDICTION:**

All questions, disputes or differences arising under, out of or in connection with the Tender / Contract shall be subject to the exclusive jurisdiction of Ahmedabad court.

- 37 If the tenderer is an Agent, he will have to give information and declare the name of the principal from which he will source the materials along with company's written confirmation about quality and backup performance guarantee. Only on getting complete information from Agent, such offer, if found suitable, shall be considered.
- PDPU reserves the right to cancel any or all the offers / bids or to accept any offer without assigning any reasons.
  - In case PDPU finds that there is an attempt of cartel in the prices, PDPU reserves the right to consider or reject any or all the parties offers without assigning any reasons thereof.
- **39** PDPU reserves the right to increase or decrease the quantity against each item/s while placing the order.
- The names of the Partners / Directors / Sole Proprietors and responsible person and his updated Address / Telephone, Fax Numbers etc. should be invariably mentioned in the Annexure provided for this purpose in this document.
- The Tenderer should give in his offer, the full name and address with phone, Fax & mobile numbers of the Authorized Representative to do liaison work with PDPU on their behalf.
- The tenderers should invariably write the name and address of the Company, both on sealed covers of EMD, Technical & Price Bids. The tender covers without the name and address will not be opened.
- 43 The tenderers are required to furnish the technical information and the Guaranteed technical particulars (GTP) along with company seal and signature of the Tenderer on each and every page / papers of the tender documents.
- Tenderer should invariably fill up all the details of all the Annexure/s including the prices in the Price Bid Annexure of this tender document and should be duly signed by authorized signatories with their rubber stamp and along with Company's seal / stamp affixed on each paper.
- 45 If the Tenderer fails to pay the Security Deposit or defaults in execution of the orders placed or if PDPU suffers any financial loss due to this, then PDPU will be at liberty to adjust the amount from other orders of the same firm or by encashing the Bank Guarantee.
- All the tenderers must ensure that all the relevant documents / papers submitted with the tender should be serially numbered, properly bounded / tied together and properly documented.
- 47 All the above points should be complied by the Tenderers. If not, tenders are likely to be

E. M. D. BANK GUARANTEE FORMAT
FOR TENDER NO. PDPU /APPENDIX - I
(BANK GUARANTEE ON NON-JUDICIAL STAMP PAPER OF Rs.100/-)
Messer's WHEREAS(Name & Address of the Firm) having their registered office at (Address of the firms Registered
their registered office at (Address of the firms Registered office) (Hereinafter called the 'Tenderer') wish to participate in the tender No for (Supply/Frection/Supply & Frection Work) (Name
of (Supply/Erection/Supply & Erection Work) (Name of the material/equipment/Work) for PANDIT DEENDAYAL PETROLEUM UNIVERSITY and WHEREAS a Bank Guarantee for (Hereinafter called the

ignored without making any further reference.

"Beneficiary") Rs(Amount of EMD) valid till(Mention here date of validity of this guarantee which will be <b>4 (FOUR)</b> months beyond initial validity of Tender's offer) is required to <b>be submitted by the tenderer along with the tender.</b>
We, (Name of the Bank and address of the Branch giving the Bank Guarantee) having our registered office at (Address of Bank's registered office) hereby give this Bank Guarantee No dated and hereby agree unequivocally and Unconditionally to pay within 48 hours on demand in writing from the PANDIT DEENDAYAL PETROLEUM UNIVERSITY or any officer authorized by it in this behalf any amount not exceeding Rs(Amount of E.M.D.), (Rupees
We
This agreement shall be valid and binding on this Bank upto and inclusive of(Mention here the date of validity of Bank) and shall not be terminable by notice or by Guarantee) change in the constitution of the Bank or the firm of Tenderer Or by any reason whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, conceded with or without our knowledge or consent by or between the tenderer and the PDPU.
NOT WITH STANDING anything contained hereinbefore our liability under this guarantee is restricted to Rs(Amt. of E.M.D.) (Rupees) (In words). Our Guarantee shall remain in force till(Date of validity of the Guarantee). Place:  Date:
Please Mention here Complete Postal Address of the Bank with Branch Code, Telephone and Fax Nos.  SIGNATURE OF THE BANK'S AUTHORISED SIGNATORY WITH OFFICIAL SEAL
ON STAMP PAPER OF RS.100/-
FORM OF BANKER'S UNDERTAKING  [For Performance Guarantees (PG) as per clause no.8 of commercial terms and conditions]
We, Bank ofhereby agree unequivocally and unconditionally to pay within 48 hours on demand in writing from the <b>PANDIT DEENDAYAI PETROLEUM UNIVERSITY</b> . or any Officer authorized by it in this behalf any amount up to and not exceeding Rs (in words) Rupees

to the said P.	ANDIT DEENDAYAL PETROLEUM UNIVERSITY on
behalf on M/s	
who have entered into a	contract for the supply/works specified below:
P.O. (A/T) Nodated	l
and shall not be terminable by notice or by Contractors / Suppliers or by any other in not be impaired or discharged by any exterior conceded or agreed, with or without our said within written contract.  "NOTWITHSTANDING" anything container restricted to Rs	y change in the constitution of the Bank or the firm of reasons whatsoever and our liability hereunder shall ension of time or variations or alterations made, given knowledge or consent, by or between parties to the
(Rupees	only). Our guarantee shall remain in force until
Place: Date:	
Please Mention here Complete Postal Address of the Bank with Branch Code,	SIGNATURE OF THE BANK'S AUTHORISED SIGNATORY WITH OFFICIAL ROUND SEAL

Telephone and Fax Nos.

## ANNEXURE - 1

I / WE, confirm that following documents are attached with the technical bid of the offer and should be placed as a First page of offer.

Sr. No	Details	Confirmation (Tick√any one)
1	Firm's details as per "Annexure –2"	YES / NO
2	"Annexure –3"	YES / NO

3	Delivery schedule as per "Annexure- 4"	YES / NO
4	Past experience details as per "Annexure-7"	YES / NO
5	PDPU technical specification duly signed and with seal of firm.	YES / NO
6	Technical & Commercial Deviation- "Annexure-6"	YES / NO
7	Experience Certificate-"Annexure-7"	YES / NO
8	Conformation of Tender Condition-"Annexure-8"	YES / NO

## ANNEXURE - 2 DETAILS OF THE FIRM

Tenderer shall provide all the details in this form\_and shall be placed as a <u>Second Page</u> of the bid.

Supplier Name					
Within Gujarat / Outside					
Pvt. Firm / Public Ltd. / S Under taking / Central G undertaking	(Indicate the relevant status)				
GST No. and GST Date					
CST No. and CST Date					
Excise No. and Excise Da	te				
Financial Turnover for Past 3 Years (Rupees in Lacs (10 <sup>5</sup> )		1 <sup>st</sup> Year	2 <sup>n</sup>	<sup>d</sup> Year	3 <sup>rd</sup> Year
Custom No. and Date (If		,			
Address of	Registered Office	Factory / Wo	orks	Authorized Representativ	
Contact person name					
Designation					
Address					
City & Pin code					
State					
Country					
Phone Nos.(Off.)					
Phone Nos.(Res.)					
Fax Nos.					
STD Code.					
Mobile No.					
Web site address					
Email-id					
Specimen signature					

## **ANNEXURE-3**

Tenderer shall fill up following details and shall be **Third page** of the Technical Bid

1	PRICES: [FIRM ONLY] (Please Specify YES / NO.)	
2	EXCISE DUTY: [SINGLE SLAB ONLY] (Please Specify INCUSIVE / EXCLUSIVE / EXEMPTED)	%
3	SALES TAX: [IN PERCENTAGE] (Please Specify INCUSIVE / EXCLUSIVE / EXEMPTED)  Please quote your Sales Tax Registration No. & Date.	%
4	PENALTY TERMS AGREED : (Please Specify YES / NO.)	
5	PERFORMANCE GUARANTEE TO COVER EXECUTION PERIOD (SECURITY) TERMS : AGREED: (Cl.no.8) (Please Specify YES / NO.)	
6	PERFORMANCE GUARNTEE TO COVER WARRANTY PERIOD TERMS AGREED: (Wherever applicable):(Please Specify YES / NO.)	
7	VALIDITY OF THE OFFER AGREED: (Please Specify YES / NO.)	
8	PAYMENT TERMS AGREED: (Please Specify YES / NO.)	
9	ITEMS OFFERED :(Yes/No)	

Signature of the Tenderer

## ANNEXURE - 4

Details of the Items and Qty.offered as a **Fourth Page** of offer.

Sr.	Details of the Items / Equipments	Quantity	Status:
No.	Offered	Offered	Supplier/Manufacturer

#### **ANNEXURE-6**

# DETAILS OF THE EXPERIENCE FOR SUPPLY OF SIMILAR TYPE OF ITEMS IN LAST THREE YEARS FROM THE DUE DATE OF TENDER:

Sr. No	ITEMS SUPPLIED TO	ORDER REFERENCE No. & DATE	ITEMS	Qty.	ORDER FULLY EXECUTED. YES/NO	STATUS, IF ORDER UNDER EXECUTION	REMARKS
1)							
2)							
3)							
4)							
5)							

## **ANNEXURE - 7**

Subject: Supply o	of						
Reference:	Tender enquiry No. PDPU/ / Due on date: / / 200 .						
In connection wi	th the above subject and reference I/ We confirm the following:						
I. I / We, the undersigned have read and examined the Tender Specifications and commercial terms and conditions of tender under reference.							
2. I / We, declare that our Technical Bid is strictly in line with the Tender specifications (except the deviations shown in Annexure No.7.							
<ol> <li>Further, I / We also agree that additional conditions / deviations, if any, found in the Commercial terms &amp; conditions (except mentioned in the Annexure-7), our offer shall be outrightly rejected without assigning any reason thereof.</li> </ol>							
Seal of the Firm Date:	Signature of the Authorised Representatives of the firm						
	Name:						
	Status:						
Name of the Tend	dering Firm / Agency:						
	Reference:  In connection will / We, the under terms and condition of the firm and condition of the firm that is a second of the fir						

#### PANDIT DEENDAYAL PETROLEUM UNIVERSITY

Raisan village, Koba-Gandhinagar High-way, Gandhinagar – 382007, GUJARAT, INDIA Tel. +91-079-23275416 Fax No:-+91-079-23275030

#### SCHEDULE - 'B' (Price Bid Format)

Sr. No	Description of materials with details of specification	PDPU Bid. qty.	Qty. offered by tenderer	Unit Ex- works In #.	Unit insurance charges in #.	Unit Freight & Packing charges in #.	Unit Custom Duty in #.	Unit Excise Duty in #.	Unit Sale Tax in #.	Unit End Cost price in #.
1	2	3	4	5	6	7	8	9	10	11

#### Note:-

- '#' Tenderer shall mention the Currency.
- In case the price quoted in Foreign Currency (Other than INR), for the purpose of comparison the Exchange Rate prevailing on the date of opening of Price Bid as notified by Custom Department, Government of India will be considered.

#### **Remarks:**

I / We agree to supply the articles mentioned above at the rates herein tendered by me / us subject to the condition of this tender which I/We have carefully read, understood and agree.

I / We here by agree to keep this offer open for 120 days after the returnable date of the tenders and shall be bound by communication of acceptance dispatched within the prescribed time.

Date:

Yours sincerely,

(Signature of Tenderer) (With Company's Round Seal)