

# Center for Rural Development & Technology: IIT Delhi

Date: 25.10.2012

## Sub: Notice Inviting Quotations for PSA Biogas Enrichment Unit with Portable Platform

Quotations are invited for the purchase of PSA unit for biogas enrichment and bottling system of capacity of 20 m<sup>3</sup>/hr and working pressure is 5 to 10 bar, to be mounted on a mobile platform.

### Vendor's Scope of Work

1. Supply of the PSA biogas enrichment unit with all accessories.
2. The procurement of all items as per the specification, their testing, assembly and final inspection is in the scope of the vendor. All the costs incurred due to any deviation from specification will be borne by the vendor.
3. Delivering the PSA unit at CRDT, IIT Delhi premises, Hauz Khas, Delhi- 16.
4. All the costs of packing, forwarding, commissioning and testing of the system at above site (IIT Delhi Premises, Delhi) will be borne by the vendor.
5. Supply of the documents like operation manual, material catalogue and calibration reports of gauges etc.
6. The supply of the layout drawings, maintenance leaflets etc., of the complete system.
7. Supply of the tools and accessories required for operation and maintenance of the system.
8. Acceptance tests shall be carried out as per the QA plan.
9. Inspection authority will be CRDT, IIT Delhi expert.
10. Acceptance of the item is subject to clearance from CRDT, IIT Delhi.

### Specifications

#### **Inlet & outlet specifications for biogas enrichment:**

##### *Inlet Gas conditions:*

<b>Flow</b>	<b>20 M<sup>3</sup>/hr at STP</b>
CH <sub>4</sub>	55-60%
H <sub>2</sub> S	~up to 500 ppm
CO <sub>2</sub>	Upto 40%
Pressure	7 to 10 Kg/cm <sup>2</sup> g

\* Inlet pressure for raw biogas up to 10 bar

##### *Outlet Gas conditions:*

CH <sub>4</sub>	90%+
H <sub>2</sub> S	Up to 25 ppm
CO <sub>2</sub> & Others	Upto 10% with 3.5 % CO <sub>2</sub>

#### **Loss of Methane**

Efforts to be made to minimize the loss of methane to atmosphere during purging. Preferably methane should be avoided for using as purging medium.

It will be desirable to incorporate air purging system or any other suitable technology for purging to minimize the methane loss.

**\*Loss of methane more than 5-7% is not desirable.**

## **QA Plan**

### **Visual Inspection:**

The PSA unit is to be checked for its completeness as per the specification. All the components shall be present at appropriate location as per the layout drawing supplied by the vendor and properly assembled. The unit should be free from scratches, dents or any marks. All the labeling for indicators has to be operated and to be checked for smooth functioning. Proper foundation of the unit has to be checked.

### **Functional Inspection:**

Overall function of the unit has to be checked and should be verified to be within limits as per specification. Whether the range of gas purity is meeting the requirement has to be checked. The volume flow rate should be checked. All connections and supply line should be leak proof. The vibration limit of foundation should be checked.

### **Delivery:**

Vendor should be able to dispatch the complete unit within a period of **2-3 months** from the date of receipt of confirmed purchase order form IIT Delhi.

### **Guarantee/warranty:**

Equipment supplied by vendor should be guaranteed for material, workmanship and its required performance for a period of **12-months** from the date of commissioning. During the guarantee period, vendor will repair/replace the defective parts or material free of cost.

### **Terms & Conditions:**

- Above unit is to be purchased on the bases of technical specifications provided by CRDT IIT Delhi. Unit is to be supplied at CRDT IIT Delhi.
- All technical details of the unit should be provided. Technical and financial bids should be sent in separate envelops.
- The quotations should have validity of two months

The quotes should reach the undersigned before **14.11.2012** by **5.00 pm**.

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