**INVITATION FOR QUOTATION**

**TEQIP-III/2018/uceo/Shopping/48** **15-Mar-2019**

To,

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**Sub: Invitation for Quotations for supply of Goods**

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

| **Sr. No** | **Brief Description** | **Quantity** | **Delivery Period(In days)** | **Place of Delivery** | **Installation Requirement (if any)** |
|---|---|---|---|---|---|
| 1 | Rooftop Grid connected solar PV system | 1 | 60 days | Department of Electrical Engineering, University College of Engineering, Osmania University, Hyderabad | Yes required |

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme[TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.
3. Quotation,
   3.1 The contract shall be for the full quantity as described above.
   3.2 Corrections, if any, shall be made by crossing out, initialing, dating and re writing.

3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit price.

3.4 Applicable taxes shall be quoted separately for all items.

3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.

3.6 The Prices should be quoted in Indian Rupees only.

4. Each bidder shall submit only one quotation.
5. Quotation shall remain valid for a period not less than **45** days after the last date of quotation submission.
6. Evaluation of Quotations,

   The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which

   6.1 are properly signed ; and

   6.2 confirm to the terms and conditions, and specifications.
7. The Quotations would be evaluated for all items together.
8. Award of contract:

   The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

   8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.

   8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.
9. Payment shall be made in Indian Rupees as follows:

   **Delivery and Installation - 0% of total cost**

   **Satisfactory Acceptance - 100% of total cost**
10. All supplied items are under warranty of **12** months from the date of successful acceptance of items.

11. You are requested to provide your offer latest by **15:30** hours on **01-Apr-2019 .**
12. Detailed specifications of the items are at Annexure I.
13. Training Clause (if any) **Yes Required**
14. Testing/Installation Clause (if any) **Yes Required**
15. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
16. Sealed quotation to be submitted/ delivered at the address mentioned below,

    **The Principal, University College of Engineering, Osmania University, Hyderabad**
17. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)

Name & Designation

**Annexure I**

| **Sr. No** | **Item Name** | **Specifications** |
|---|---|---|
| 1 | Rooftop Grid connected solar PV system | **Rooftop Grid Connected Solar PV System**<br>The above rated plant should be divided into two parts.<br>1) From the total of 10kWp, 4kWp of solar PV power is fed to the lab for carrying research work on Microgrid and EV charging.<br>2) The remaining 6kWp of solar power is to be operated both in grid-tied , stand-alone mode for supplying power to water pump, faculty rooms and also to study effect on loads when there is change in irradiation.<br>***Specifications for 4kWp of solar PV power***<br>**1. SPV Modules:** SPV Modules 300/315Wp Poly/Multi crystalline, Indigenous, Complying with MNRE specifications and IEC 61215 IS14286.<br>**2. Module Mounting Structure (MMS):** The PV module will be mounted on fixed metallic structure of adequate strength and appropriate design which can withstand load of modules and high wind velocities up to 150 km per hour. |

| | | |
|---|---|---|
| | | 3. **Step-up Transformer:** A Three Phase Delta – Star connected ( e.g., 220/ 440 V ) step-up transformer of cumulative capacity of PV module is required<br><br>4. **Inverter with Filters:** String Inverters of cumulative capacity of PV module or suitable grid connected Inverter as per IEC specifications and MNRE empanelled which can be operated at both leading and lagging power factor. The Inverter is to be controlled with a DSP Controller where there should be a provision to alter the program to meet the research activities.<br><br>5. **Boost Converter:** A Boost converter for tracking MPPT (P&O or I&C method) of sufficient capacity. The Boost converter is to be controlled with a DSP Controller where there is a provision to alter the program to meet the research activities.<br><br>6. **Batteries:** Sufficient amount of storage capacity provided by battery bank for maintaining DC link voltage across the inverter<br><br>7. **Bi-direction DC-DC Converter:** The batteries charge and discharge through this converter. A sufficient rating bi-directional DC-DC converter is required.<br><br>8. **MG set:** A Motor Alternator set ( M-G set) of 415V , 10A, 4kVA to be connected to the PV and Grid at Point of Common Coupling (PCC)<br><br>9. **DSP controller (TMS320f28335):** The entire system is to be controlled by the specified DSP controller with a provision to modify the program<br><br>10. **Irradiation Sensor:** To forecast the weather, the irradiation sensor are to be provided with sufficient storage.<br><br>11. **Off-Board Electrical Vehicle Charging setup:** Plug-in charging facility to charge electrical vehicle from solar power is required of suitable range.<br><br>12. **Mechanical Tracking System:** A tracking system is to be provided according to the change in sun position for extracting maximum power. |

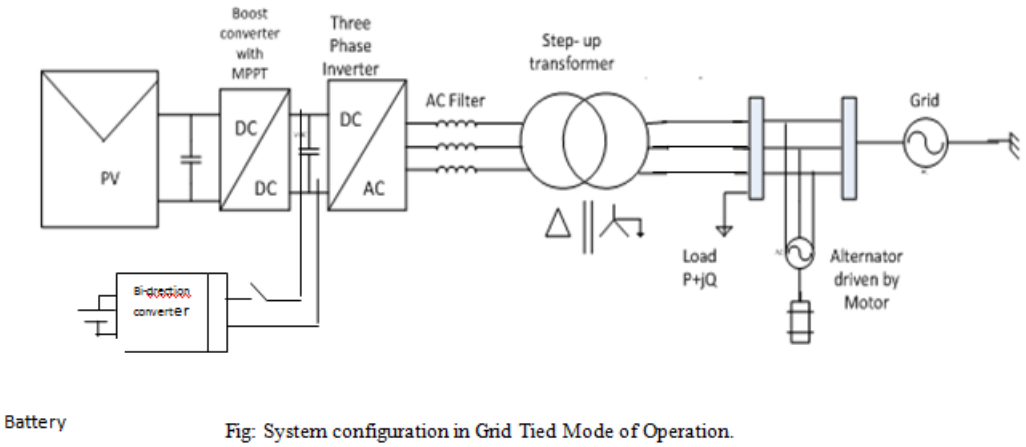


Fig: System configuration in Grid Tied Mode of Operation.

***Specifications for 6kWp of solar PV power***

1. **SPV Modules:** SPV Modules 300/315Wp Poly/Multi crystalline, Indigenous, Complying with MNRE specifications and IEC 61215 IS14286.
2. **Module Mounting Structure(MMS):** The PV module will be mounted on fixed metallic structure of adequate strength and appropriate design which can withstand load of modules and high wind velocities up to 150 km per hour
3. **String Inverters :** 415 V, String Inverters of cumulative capacity of PV module or suitable to Capacity grid connected Inverter as per IEC specifications and MNRE empanelled which can be operated at both leading and lagging power factor with a provision to measure the readings with MultiMate
4. **Batteries:** Sufficient amount of storage capacity provided by battery bank for maintaining DC link voltage across the inverter
5. **Solar water pump controller:** A 5 kW power from PV is to be supplied to a pump of 5kW rating present in the department when solar power is available and later can be connected to grid.
6. **Bi-directional DC -DC Converter:** a bi-directional DC-DC converter is required to connect the battery to the PV system when operating in stand-alone mode with charge controller.
7. **SCADA:** A Provision for analysing the data is required for analysis.
8. **Mechanical Tracking System:** A tracking system is to be provided according to the change in sun position for extracting maximum power.

**FORMAT FOR QUOTATION SUBMISSION**

(In letterhead of the supplier with seal)

Date: _____

To:

_____

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| Sl. No. | Description of goods (with full Specifications) | Qty. | Unit | Quoted Unit rate in Rs. (Including Ex Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments) | Total Price (A) | Sales tax and other taxes payable | |
|---|---|---|---|---|---|---|---|
| | | | | | | In % | In figures (B) |
| | | | | | | | |
| **Total Cost** | | | | | | | |

Gross Total Cost (A+B): Rs. _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. ———————— (Amount in figures) (Rupees ————————amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of ——————— months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: _____

Address: _____

Contact No: _____