

## **TENDER NOTICE**

**G.PULLAREDDY ENGINEERING COLLEGE (GPREC) & G.PULLAREDDY DENTAL COLLEGE (GPRDC), KURNOOL**

jointly invite Sealed Quotations from eligible Contractors / Suppliers for “**Supply, Installation, Testing and Commissioning of Two Units of 100 kWp Solar PV Plant with Net Metering System**” on the rooftop of various buildings of GPREC & GPRDC.

Sealed Quotations superscribed with the name of the work shall be submitted (in person / by post) in the office of the **Principal, G.PULLA REDDY ENGINEERING COLLEGE** (Autonomous), Nandyal Road, KURNOOL – 518007, so as to reach on or before 5 PM on **20-11-2015**. For details visit [www.gprec.ac.in](http://www.gprec.ac.in) or contact: 9966655504.

- Secretary

## **TENDER NOTICE**

**Tender for the work of “Supply, installation, testing and commissioning of two 100kWp Grid connected Solar PV Plant with Net Metering Mechanism”**

**at**

**G. Pulla Reddy Engineering College and G. Pulla Reddy Dental College,  
Kurnool.**

Secretary of G. Pulla Reddy Engineering College (GPREC) and G. Pulla Reddy Dental College (GPRDC), Kurnool invites sealed applications from various companies for the above work.

### **Scope of work:**

The scope of work involves supply, installation, testing and commissioning of two units of 100 kWp grid connected solar PV Plant with net metering system on the terrace of buildings of GPREC and GPRDC.

### **Eligibility Criteria**

1. The applicant should have experience in supply and commissioned grid connected solar PV systems with net metering mechanism.
2. The applicant's performance in respect of completed works should be certified by the Project Manager or equivalent officer of the respective work and should be obtained and delivered in sealed covers.
3. The work for which the performance certificate is submitted should have been carried out directly by the applicant. Works carried out as sub contractor for other firms/contractors will not be considered as eligible works.

### **Documents to be submitted**

1. Brief details about the Firm/Company
2. Details of works executed during the last 5 years.
3. Completion certificates in respect of works to be considered for qualification as per the Eligibility criteria.

### **Submission of Application:**

Applications in sealed cover superscribed with the name of work as given above shall be sent to the office of the Principal, G. Pulla Reddy Engineering College, Kurnool – 518 007 so as to reach **on or before 5 PM on 20/11/2015.**

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## **Conditions of Contract**

- The tender shall make arrangements for laying of cables, lifting of modules, structures and other necessary equipments to the site of work.
- Civil and other constructional works will be the tenders' scope.
- No child labor shall be entertained.
- The tenderer shall indemnify the employer against the all losses and injuries or damages to any person or material or any physical damage to property.
- For safety at site tenderer shall appoint a full time qualified person as in-charge for taking care of implementation of system.
- Sales Tax (Vat), Service Tax, Purchase Tax, Turnover Tax, Works contract Tax, any other tax on material, labor and works in respective to this contract shall be payable by tenderer, GPREC and GPRDC will not be entertained.
- All the fitting tools and tackles shall be stored properly.
- Module mounting structure should with stand for a wind speed of 160 kmph.

## **Technical Conditions**

### **1. Solar PV Modules**

- (a) Individual PV Module should not be less than 250Wp.
- (b) Provide Manufacturer name and Model Number.
- (c) Efficiency of module shall be greater than 15%.
- (d) Specify  $V_{oc}$ ,  $I_{sc}$ ,  $V_{mp}$ ,  $I_{mp}$ , temperature coefficient of  $V_{oc}$ ,  $I_{sc}$ .
- (e) Specify dimensions and weight of module.
- (f) PV modules shall be suitable for grid connected system.
- (g) I-V curves shall be accompanied along with the supply of all PV modules
- (h) PV Module shall be highly reliable, light weight and shall have service life of more than 25 years.
- (i) PV modules shall be supplied with 25 years linear performances warranty, apart from 10 years of product warranty, unlike two step warranty i.e., 90% at the end of 10 years and 80% at the end of 25 years (Documental proof shall be provided).
- (j) PV modules shall be supplied with RFID.
- (k) The rated power output of all PV modules shall not vary by more than 3% of value at the time of installation. The value shall be specified and documental proof shall be provided

2. Four number of Grid Connected String Inverters

- a) Capacity of each string inverter shall be 25kW
  - b) Product catalogue containing the technical specifications along with the copies of test certificates shall be provided.
  - c) Inverters shall have built in dc switch in the front end.
  - d) MPPT shall be integrated as a part of the inverter.
  - e) Output Voltage: 415 V, three phase four wire and nominal voltage shall be adjustable by 10% on either side via system set points.
  - f) Output frequency: Nominal 50Hz, working range shall be from 47 Hz to 52 Hz for the inverter to follow the grid frequency during normal operation.
  - g) Output waveform shall be sine wave with a THD of <3% and THD shall be specified.
  - h) Weighted or Euro efficiency shall not be less than 97.5% and the efficiency figure shall be specified.
  - i) Inverters shall be capable of allowing unbalanced loading (up to 15% rated inverter load) of the phase.
  - j) Inverters shall be capable of synchronizing independently and automatically to be phase locked with 415V AC mains frequency to attain the synchronization and supply power to the loads.
  - k) In the event of grid failure, the inverter should sense and the PV output through inverter shall get disconnected from the grid automatically. And when the grid supply is restored, the inverter shall be able to synchronize to the AC mains automatically.
  - l) Inverters shall have built-in protection against over voltage and protection against transients, bursts and surges from grid side.
  - m) Inverter shall operate and perform under relative humidity condition up to 95% at temperature from 0°C to +55°C.
  - n) Inverter shall have menu driven LCD keyboard operator interface and all parameters shall be accessible through an industry standard communication link.
  - o) Type of industry standard communication link shall be specified and necessary software support shall be provided.
3. Provide required size and gauge of cable at DC side and AC side.
4. Specify the losses and overall output (W or KW) of each string at standard test Conditions.

5. Provide adequate number of array junction box.
6. All equipments supplied to the system must satisfy as per MNRE, IEC Standards.
7. Supplier shall supply and install the AC combiner to combine the output power of string inverters.
8. DC wiring of PV modules and PV strings shall be done as per the requirements.
9. Wire sizing for DC cabling shall be done in such a way that the permissible power loss is to be within 2%.
10. DC cables shall be solar grade and shall be obtained from reputed manufacturers.
11. AC cables shall be from reputed manufacturers.
12. Diameter sizing shall be done based on the current carrying capacity and permissible voltage drop of 2%.
13. Earth strip, strip ties, lugs used for commissioning the earth shall use standard and quality materials of reputed brands.
14. Number of earthing shall be provided at each building site as per IS specifications.
15. The system shall be provided with sufficient lightening arresters.
16. The tenderers are advised to visit the site and examine it and its surroundings and collect all information that is considered necessary for proper assessment of the requirement.
17. The entire structure shall be design with GI Steel with suitable thickness to withstand the weight of the modules and cyclonic wind forces of 160kmph.
18. The rates quoted by the tenderer shall be firm and inclusive of all taxes (including works contract tax), duties and levies. All charges for packing, forwarding, insurances, freight, delivery, testing and commissioning should be included.
19. Provide Net metering system with required feasibility reports from APSPDCL shall be in the tenderer scope.

### **Payment Conditions:**

- The quoted price must include all applicable taxes duties, transportation and installation charges.
- 20% of amount along with the purchase order.
- 60% of amount prior to dispatch of various equipment, against proforma invoice. The material shall be delivered at our site within 10 days of payment.
- 20% of amount after installation and commissioning of the solar system and net metering system.

## **OTHER TERMS & CONDITIONS**

### **A. SUPPLIER'S SCOPE OF WORK**

Tenderer's scope of work for design, procurement, installation and commissioning of two 100kWp Solar PV projects are detailed hereunder:

- a. Site Visit and detailed study of open space available, electrical loads of the consumer, obtaining site measurements, photographs and other field data required for detailed design of the systems.
- b. Detailed design and engineering of the system including civil, structural and electrical components and preparation of construction drawings and specifications
- c. Procurement of all civil, structural and electrical components as per detailed engineering and identified makes and models, and delivery to site along with freight insurance
- d. Perform complete system installation
- e. Testing and commissioning of all electrical and electronic equipment as per manufacturer's instructions
- f. Commissioning the system to full capacity
- g. All liaisons with NREDCAP for claiming subsidy from MNRE under Net Metering Policy.
- h. All liaisons with CEIG and APSPDCL for commissioning of the system and connection under Net-Metering.

### **B. PURCHASER'S SCOPE OF WORK:**

- a. Provide shadow free open space of at least 1000 Sq.mtrs
- b. Provide necessary covered and enclosed space for installation of inverter
- c. Provide safe and secure storage area for the project components, upon receipt at site
- d. Facilitate access to supplier's crew to the worksite, as required
- e. Depute necessary staff for interfacing and consultation on site specific aspects
- f. Provide necessary interface for connecting the solar PV systems to ACDB of the end user
- g. provide necessary internet connectivity to the inverter for remote monitoring of energy generation
- h. Provide all necessary applications and relevant documents for obtaining statutory clearances.
- I. Provide power and water required for civil construction and electrical works
- i. Purchase of Bi-Directional meter, CT/PT and other necessary equipment form APSPDCL, as required for Net Metering policy.
- j. All official charges required for net-metering and CEIG are to the account of Purchaser.

### **C. EXCLUSIONS:**

For the sake of clarity the following specific task are excluded from the scope of supplier:

- a. Insurance for the solar PV systems post commissioning and operation, including third party insurance required for Net metering Policy.
- b. Periodic cleaning of modules during operation period.

## **PROJECT SCHEDULE**

The project shall start from the date of receipt of Purchase order by tenderer along with advance amount as per the commercial terms and conditions, and shall be deemed to be completed upon commissioning of the system up to full capacity. The list of major activities and their tentative schedule from the start date is listed hereunder:

| Sl. | Activity   | Time line from Start |
|-----|--|----------------------|
| 1   | Receipt of P.O with Advance  | Start                |
| 2   | Site Visit, field data study, application for Net Metering and subsidy approvals | 2 Weeks              |
| 3   | Completion of detailed design and ordering of all key equipments                 | 3 Weeks              |
| 4   | Receipt of all material at site  | 5 Weeks              |
| 5   | Installation and commissioning   | 10 Weeks             |