



**NATIONAL INSTITUTE OF TECHNOLOGY  
ROURKELA – 769 008, ODISHA**

**Advertised Tender Enquiry**

**Department: Electrical Engineering**

**Tender Notice No: NITR/PW/EE/2019/165**

**Date: 12/11/2019**

**Important Dates**

**To**

**Through  
CPP Portal  
(E-procurement)**

<b>Event</b>	<b>Date</b>	<b>Time</b>
Pre-bid Conference	<b>NA</b>	<b>NA</b>
Last Date of submission of Bid	<b>03/12/2019</b>	<b>11:00 AM</b>
Date of opening of Techno-commercial Bid	<b>04/12/2019</b>	<b>11:00 AM</b>

Dear Sir,

We intend to purchase the commodities specified below and invite quotations in accordance with the terms and conditions detailed in the bid document. If you are interested, kindly send your offer with prices and complete terms within the time mentioned above.

For any clarification:

Attention:-  
Prof. Anup Kumar Panda  
Department of Electrical Engineering  
National Institute Of Technology  
Rourkela – 769008, Odisha  
Phone: 0661 – 2462407  
E-mail: [akpanda@nitrkl.ac.in](mailto:akpanda@nitrkl.ac.in)

Yours sincerely,

\_\_\_\_\_  
Name: Prof. Anup Kumar Panda  
PIC [Power Electronics Laboratory]

**Encl:**

- 1) Schedule of requirement, specifications, dates etc.**
- 2) Bid document containing detail terms and conditions.**

**1. Schedule of requirements**

Sl. No.	Description of Goods/Service	Quantity
1	<b>A) Programmable DC Power Supply 150V/40A/2kW with solar array simulation</b>	<b>1(One)</b>

**2. Specifications and allied Technical Details**

For detailed specification see Annexure I

**3. Format of Quotation**

It is a two-part bid with separate techno-commercial and price bids.

4. The Bid should be submitted through <https://eprocure.gov.in/eprocure/app>

5. Quotations should be valid for a period of **90 days** from the date of opening of techno-commercial bid.

**6. Some important dates:**

i.	Pre-bid Conference:	Date: <b>NA</b>	Time: <b>NA</b>
ii.	Last date for submission of bid :	Date: <b>03/12/2019</b>	Time: <b>11:00 AM</b>
iii.	Opening date of techno-commercial bid:	Date: <b>04/12/2019</b>	Time: <b>11:00 AM</b>

7. **Warranty:** Warranty must be **1 year** onsite which should be clearly mentioned along with the quotation.

8. **Technical Evaluation Criteria:** As per the detail equipment technical specifications given in Annexure –I. If required, the bidder may be asked to provide clarification regarding the technical aspects.

**Other qualification Criteria:**

- a) At least three user names and contacts from NIT/IIT/reputed Indian institute /Govt. R & D organizations must be provided where the above equipment and accessories (Annexure –I) have been supplied in last five years. Scan copies of the minimum three purchase orders of the above equipment and accessories (Annexure-I) must be enclosed along with the technical bid.
  - b) There must be a local maintenance centre with the availability of the spares in India.
  - c) Scanned copies of the technical brochure of the above equipment and accessories (Annexure-I) given in the quotation must be included in the technical bid.
  - d) Web reference must be provided along with the technical bid.
  - e) Make and model no. should be mentioned in the technical bid.
  - f) Customized equipment and accessories (Annexure-I) will not be accepted.
9. The comparison will be made for award of contract on the overall price basis

10. (a). If the price quoted in foreign value, the prize should be CIF/CIP up to Kolkata airport.  
(b) **GST: GST should be charge according to applicable rates (if applicable).**
11. **Bid Security (EMD) and Tender Cost: - EMD (Earnest Money Deposit)** in shape of DD (Demand Draft) for **INR 12,000/- (Rupees Twelve thousand only)** and Tender cost (Non-refundable) in the form of DD for **INR 500/- (Rupees Five Hundred only)** in favour of "**Director, NIT Rourkela**" payable at Rourkela from any Scheduled Commercial Bank except Co-operative and Gramin Bank. And DD for the EMD (Earnest Money Deposit) should remain valid for a period of 45 days beyond the bid validity period from the date of the opening of the tender. The EMD (Earnest Money Deposit) of unsuccessful bidders should be return to them at the earliest and latest on or before the 30<sup>th</sup> days after the award of the contract. EMD (Earnest Money Deposit) and the tender cost should reach physically through **speed post/ registrar post / courier**, containing in an envelope & superscripted with subject, tender reference number addressing to **Registrar, NIT Rourkela-769008, Odisha on or before 04/12/2019 at 11:00 AM.**
12. Please go through the enclosed "bid document" carefully for other bidding instructions.
13. Please send you quotation through <https://eprocure.gov.in/eprocure/app>
14. For technical details, you may contact

**Prof. Anup Kumar Panda**  
**Department of Electrical Engineering**  
**National Institute Of Technology**  
**Rourkela – 769008, Odisha**  
**Phone: 0661 – 2462407**  
**E-mail: [akpanda@nitrkl.ac.in](mailto:akpanda@nitrkl.ac.in)**



# NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA – 769 008, ODISHA

## **BID DOCUMENT**

### **1. Instructions to the bidders**

- 1.1 Bids are invited on behalf of the Director, National Institute of Technology (NIT), Rourkela – 769008, Odisha, from the intending bidders for supply of the goods/stores/equipments for the Institute as detailed in the enquiry letter.
- 1.2 The bidders should quote their offer/rates in **BOQ** in clear terms without ambiguity.
- 1.3 In case of any discrepancy between the rates in figures and that in words, the rate in words will be accepted as correct.
- 1.4 The last date for receipt of the bid is marked in the enquiry.
- 1.5 The Bid should be uploaded in <https://eprocure.gov.in/eprocure/app> Please follow the guideline of the site.
- 1.6 If a prospective bidder requires any clarification in regard to the bidding documents, he may make a request the concerned officer or faculty member at least 15 days before the deadline for receipt of bids.
- 1.7 Bids received after the deadline of receipt indicated in Para 1.4 above shall not be taken into consideration.
- 1.8 Each bidder shall submit only one bid. A bidder, who submits more than one bid, shall be disqualified and considered nonresponsive.
- 1.9 (In respect of high value plant, machinery etc. of a complex and technical nature). The bids may be submitted in two parts, viz., technical bid and financial bid.
- 1.10 The bidder has to sign in full at all pages of the scanned part of the bidding document. No over-writing in those pages are acceptable.
- 1.11 Bidders registered with any of the following agencies/ bodies as per Public procurement policy for Micro & Small Enterprises (MSE) order 2012 are exempted categories from payment of EMD provided that the registration Certificate issued by any one of these below mentioned agencies must be valid as on close date of tender. Micro small or medium enterprises who have applied for registration or renewal of registration with any of these agencies/bodies but have not obtained the valid Certificate as on close date of tender are not eligible for exemption.
  - i) Khadi and Village Industries Commission (KVIC)
  - ii) National Small Industries Corporation (NSIC)
  - iii) Any other body specified by Ministry of MSME/GOI

### **2. Conditions of the bid**

- 2.1 The rates quoted should preferably be net, inclusive of all taxes and duties, packing, forwarding, freight, Insurance and all other incidental charges. In case these charges are quoted extra in addition to the quoted rates, the amount thereof or Ad Valorem rate must be specified. Packing, forwarding, freight etc., when quotes separately are reimbursable at actuals. If external agencies are employed, their receipts must be enclosed with the invoice.

- 2.2 Duties and Taxes are to be quoted separately. Ad Valorem rates thereof should be clearly indicated with reference to the relevant Acts and Rules.

**It may be noted that the Institute is availing custom duty exemption in terms of Notification No. 51/96 – Customs dt. 23.07.1996, Notification No. - 47/2017- Integrated Tax (Rate) dt. 14.11.2017 and Notification No- 45/2017 – Integrated tax (Rate) dt. 14/11/2017 & Notification No. - 45/2017- Central tax (Rate) dt. 14.11.2017, Notification No. - 45/2017- Union Territory Tax (Rate) dt. 14/11/2017 [Vide DSIR, Ministry of Science and Technology, Government of India, Registration No.: TU/V/RG- CDE (227)/2016, dated: 13.11.2018]**

- 2.3 The goods are required to be delivered at the indenting Department of NIT, Rourkela, and must be reached within **90 days** from the date of placement of the supply of order under the risk and arrangement of the bidder and offers with delivery beyond the above period shall be treated as unresponsive. In case the delivery time is higher, the same must be mentioned clearly in the quotation.
- 2.4 The bid should remain valid for a period of **90 days** from the date of opening. In case your offer has a different validity period that should be clearly mentioned in the quotation.
- 2.5 Conditional discount, if any, offered by the bidder shall not be considered at the time of evaluation.
- 2.6 The goods offered should strictly conform to the specification and technical details mentioned in **Annexure I**.
- 2.7 The Institute may like to conduct pre-dispatch inspection of goods, where applicable.
- 2.8 Period of guarantee/warranty, where applicable, should be specified in the bid.
- 2.9 If the successful bidder, on receipt of the supply order, fails to execute the order within the stipulated period, in full or part, it will be open to the Director, NIT Rourkela to recover liquidated damage from the firm at the rate of 1 percent of the value of undelivered goods per month or part thereof, subject to a maximum of 5 percent of the value of undelivered goods. Alternatively, it will also be opened to the Director, to arrange procurement of the required goods from any other source at the risk and expenses of the bidder.
- 2.10 The successful bidder may be required to execute a contract, where applicable.
- 2.11 The bidder has to furnish up to date Income Tax Clearance Certificate along with the bid.
- 2.12 Payment (*100 percent*) will be made by Account Payee Cheque/Bank Draft/NEFT/RTGS, within 30 days from the date of receipt of the goods in good condition or receipt of the bill, commissioning of the equipment, where applicable, whichever is later/latest.
- 2.13 In case of Advance payment, the payment will be made on either in Foreign Demand Draft or Wire Transfer only. The proforma invoice copy need to be sent for advance payment.
- 2.14 In the event of any dispute arising out of the bid or from the resultant contract, the decision of the Director, NIT, Rourkela shall be final.
- 2.15 The bid document/resultant contract will be interpreted under Indian Laws.

**(A) TECHNICAL SPECIFICATION FOR Programmable DC Power Supply 150V/40A/2kw  
With Solar Array Simulation****Specification Required:**

<b>Parameters</b>	<b>Specification</b>
<b>Output Ratings</b>	
Output Voltage	0-150V
Output Current	0-40A
Output Power	2000W
<b>Line Regulation</b>	
Voltage	±0.01% F.S.
Current	±0.05% F.S.
<b>Load Regulation</b>	
Voltage	±0.05% F.S.
Current	±0.01% F.S.
<b>Voltage Measurement Accuracy</b>	0.10%
<b>Current Measurement Accuracy</b>	0.20%
<b>Output Noise &amp; Ripple</b>	
Voltage Noise pk-pk	500mV
Voltage Ripple (rms)	75mV
Current Ripple (rms)	90mA
<b>OVP Adjustment Range</b>	
Range	0-110% programmable from front panel or digital
Accuracy	±1% of full-scale output
<b>Programming Response Time</b>	
Rise Time: Full Load / No Load	10ms
<b>Voltage slew rate Range</b>	0.01V/ms - 12V/ms
<b>Minimum Transition Time</b>	0.5ms
<b>Transient response time Recovers</b>	within 1ms to +/- 0.75% of steady-state output for a 50% to 100% or 100% to 50% load change(1A/us)
<b>Programming &amp; Measurement Resolution</b>	
Voltage (Front Panel)	10mV
Current (Front Panel)	1mA
Voltage (Digital Interface)	0.002% of Vmax
Current (Digital Interface)	0.002% of Imax
<b>Remote interface</b>	Analog programming, USB, RS232 and RS485
<b>Input Specification</b>	1-phase, 200-220VAC, 47-63Hz

**Functions:**

- 1. Hardware Unit will be programmed directly via Hardware and software both for SAS feature.**
- 2. SAS Supplied with Solar Array Simulation Software which is user friendly & easy to operate**
- 3. Real world weather simulation & fast I-V curve update rate up to 1s**
- 4. Real time analysis of PV inverter's MPPT tracking & data record**
- 5. Simulates shadowed I-V curve output**
- 6. Built in facility for Static & Dynamic MPPT efficiency testing of EN50530/CGC-GF004/Sandia**
- 7. Simulates different solar cell material I-V characteristic (Fill factor) up to 0.4 to 0.95.**
- 8. The simulator should be capable of simulating I-V curves for the SUN intensity ranging from <200W/m<sup>2</sup> to 2000W/m<sup>2</sup>. Similarly, the array simulator should be capable to simulate combined effect of the temperature or intensity conditions**
- 9. The simulator have a built-in 16 bit digital control and precision voltage & current measurement circuits with a voltage accuracy of 0.05% and a current accuracy of 0.1%**
- 10. The array simulator should be able to simulate all types of PV modules including Mono/Multi-crystalline Silicon, thin film & High efficiency crystalline PV Modules.**
- 11. The PV array simulator should have facility to simulate the I-V curves/data of any kind of PV array's operating conditions, such as partial/ complete shadowing of solar cell(s), PV module, panel, bypass diode failure etc. Simulation of dynamic irradiation intensity and temperature level from clear day to cloud cover conditions**

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