



National Institute of Solar Energy
(An Autonomous Institute of Ministry of New & Renewable Energy)

ADDENDUM

Reference Notice inviting Tenders for supply, installation and commissioning of 15kVA Solar Array Simulators for National Institute of Solar Energy.

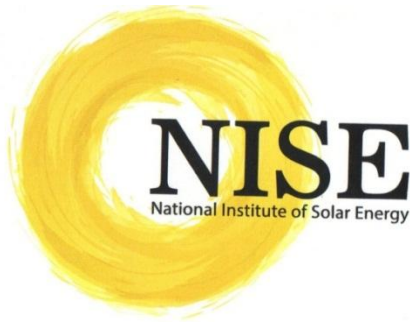
The number of Solar Arrays has been increased from four to SIX. The bids may be submitted by 15th July, 2016 12.00 Noon. The Tender Document is available on the NISE website: www.nise.res.in.

Dr O S Sastry
Director General

BID DOCUMENT

for

Supply, Installation and Commissioning of six numbers of 15 kVA Solar Array Simulators



NIT NO: 1/1(08)/2015-NISE(1)

DUE ON: 15/07/2016

At

NATIONAL INSTITUTE OF SOLAR ENERGY

19th Milestone, Institutional Area,

Gurgaon-Faridabad Road, Gwal Pahari, Gurgaon, Haryana,

INDIA

Telefax No. : +91-124-2579207

No.1/1(08)/2015-NISE(1)
National Institute of Solar Energy
Faridabad-Gurgaon Road
Gwalpahari, Gurgaon-122003 Haryana

TENDER NOTICE

Subject:Supply, Installation and commissioning of six numbers of 15 kVASolar Array Simulator at National Institute of Solar Energy, Gurgaon.

On behalf of Director General (DG), National Institute of Solar Energy(NISE) sealed tenders are invited from reputed manufacturers or their authorized Indian representatives, in two parts (Technical and Commercial separately) for Supply, Installation and commissioning Three numbers of 15 kVASolar Array Simulator at National Institute of Solar Energy, Gwal Pahari, Gurgaon, Haryana, India. The manufacturer should be a globally reputed company and should have sufficient experience in Design & Fabrication of 15KVA Solar Array Simulators. Preference may be given to the manufacturers having their authorized repair & service center(s) in India and a list of the same should be supplied along with the bid document. **A list of actual users/ customers should also be furnished along with the Technical Bid.**

Bid Details

SI.No.	Description	Details
1	Notice Inviting Bid(NIT) No	1/1(08)/2015-NISE(1), date 10.3.2015
2	Scope of work	Supply, Installation, commissioning and warranty for minimum 1 year of six numbers of 15 kVASolar Array Simulatorsat NISE.
3	Solar Array Simulators (SAS)	Four numbers of 15 kVASolar Array Simulators
4	Place of issue & submission of biddocument and address for communication	NATIONAL INSTITUTE OF SOLAR ENERGY 19th Milestone, Institutional Area, Gurgaon-Faridabad Road, Gwal Pahari, Gurgaon, Haryana, India 122003
5	Period of availability of bid Document	Date: 24/06/2015 to 15/07/2016
6	Last date & time of submission of bid	15/07/2016 <u>by 12.00PM</u>
7	Date & time of opening of Part – I(Technical Bids)	15/07/2016 at <u>15.00PM</u>
8	Date & time of opening of Part – II(Price-Bid)	Will be intimated to technically qualified bidders in due course.
9	Cost of biddocument (Non-refundable)	Free of Cost
10	Earnest Money(Refundable)	Rs. 50,000/-
12	Time of supply	1Month, before 30 th September,2016

13	Validity of offer	The offer should remain valid for 2months from the date of tender publication date
14	Validity of earnestmoney	The earnest money shall be submitted by the bidder in the form of CDR/FDR/BG from any bankoperations in India pledged to the Director General NISE.This shall remain valid for 12 months from the date of submission of bids.

DETAILED TENDER NOTICE

Name of Work: Supply, Installation and Commissioning of Six numbers of 15 kVASolar Array Simulators at NISE.

1. ELIGIBILITY CRITERIA

1.1 Manufacturers who have past experience of fabricating such systems, or at least similar systems with at least 3-successful installations in India are preferred. A list of clients whose sites are open to visit by NISE officers for demonstration should be enclosed.

2. Technical Specifications:

AC Input	3 Phase 415VAC
DC Output	Open Circuit Voltage, Voc: 0 – 1000Vdc Short Circuit Current, Isc: 0 – 15Adc
Maximum Power Point Tracking (MPPT) Speed	Should be Compatible with inverters sweeping the MPP at up to 200 Hz.
Output isolation	±1000Vpk, positive or negative output to chassis ground, continuous
Output leakage	Output to chassis ground, DC : <1 mA @ 1000Vdc
Accuracy	Voltage programming and readback: ±0.2% of full scale voltage Current programming and readback: ±0.5% of full scale current

Sampling resolution	Voltage and current are synchronously sampled by two independent 16-bit A/D converters at 200kS/s.
I-V Curve Resolution	1,024 points with interpolation
PV Array Parameters	Irradiance level: 0 to 1999 W/m ² Temperature value: -100°C to +100°C Voltage and power temperature coefficients: $\pm 1.99\%/^{\circ}\text{C}$
OVP Accuracy	0.2% of full scale voltage
OVP Resolution	0.002% of full scale voltage
Output noise	< 2 V _{pp} measured across a 1 μ F capacitor at the end of a 1.8m (6ft) line at full load.
Efficiency	87% typical at nominal line and max load
Stability	$\pm 0.05\%$ of set point after 30 minute warm-up and over 8 hours at fixed line, load and temperature, typical
Temperature Coefficient	System should be able to program temperature coefficient from +2% to -2%/°C
Expansion	Expandable to higher power levels by paralleling the units
Interface	The system should provide Ethernet interface for remote control and programming
GUI	Each unit of PV simulator should provide the GUI software with separate laptop/ desktop (So that each unit can be used separately) for programming various parameters required for simulating the required conditions of different irradiance levels, V _{oc} , I _{sc} etc.

Dynamic simulation	System should be able to import and replay (simulate) dynamic irradiance and temperature profiles for various conditions such as clear Sky, Partly cloudy, Mostly cloudy or Hot Spot conditions in the Solar Array
Regulatory	Certified to UL/CSA 61010 and IEC/EN 61010-1 by a NRTL, CE Compliant
Series and parallel operation	Possibility of connection in parallel - minimum fournos

3. **General:**

- 1.The installation, commissioning & trials to demonstrate proper functioning of the all the systems will be the responsibility of the supplier.
- 2.The manufacturer have to supply the calibration reports from the authorized calibration laboratory.

4. **EARNEST MONEY DEPOSIT (EMD)**

A sum of Rs.**50,000/-** should be submitted as Earnest Money Deposit (EMD) **along with the technical bid** in the form of **bank demand draft/Bank Guarantee** drawn in favor of “National Institute of Solar Energy”, and payable at Gurgaon, Haryana. The EMD of the accepted tender will be retained as Security Deposit and the EMD of other unsuccessful bidders would be refunded.

5. **RATES:**

The rates should be quoted specifically on the following lines:

- a. Firm and final cost of the six numbers of 15 kVASolar Array Simulator as per the above specifications and features along with costs of the installation charges as per the above specifications and features should be provided.
 - b. Taxes and freight etc. if any applicable should be indicated separately and clearly.
6. **DELIVERY PERIOD:**Six numbers of 15 kVASolar Array Simulator should be delivered in a single consignment at the site/consignee within 2months from the date of issue of confirmed supply order.
7. **INSPECTION:** The supplier should satisfy himself/herself that the six numbers of 15 kVASolar Array Simulatoras per the above specifications and features along with options, accessories, conform to the specifications by carrying out complete pre-inspection of each component before dispatch.Final inspection will be carried out in the presence of firm’s representative/Indian agent when the system is installed and commissioned at National Institute of Solar Energy (NISE), an Autonomous Institute under

the Ministry of New and Renewable Energy, 19th Mile Stone, Gurgaon-Faridabad Road, Village & P.O. GwalPahari, District Gurgaon (Pin 122003), Haryana, India.

8. **CONSIGNEE:** Deputy Director General (SPV-Testing), National Institute of Solar Energy (NISE), (an Autonomous Institute under the Ministry of New and Renewable Energy), 19th Mile Stone, Gurgaon-Faridabad Road, Village & P.O. GwalPahari, District Gurgaon, Pin 122003, Haryana, India. The port of destination is Indira Gandhi International Airport, New Delhi, India and addressed to the consignee.

9. **GUARANTEE/WARRANTY:** System/Spares supplied should be covered by standard terms of warranty for a period of 12 months from the date of installation or 18 months from the date of delivery, whichever is later for manufacturing defects/performance.

10. **PENALTY:**

- i. The supplier shall supply the stores in accordance with the particulars as expressly specified at the time/times and at the place/places only.
- ii. The time for and the date of the stores stipulated shall be deemed to be the essence of the supply/work order.
- iii. If for any reasons the contractor is unable to adhere to the contract delivery dates, he may seek extension in delivery/completion dates well in time by sending a request in writing in this regard to the office issuing the contract/supply order. The purchaser reserves the right to allow the extension of delivery period subject to such conditions as he may think fit. However, the decision of the purchaser shall be final and binding.

11. **DISPUTES:** In case of any dispute the decision of the Director General, National Institute of Solar Energy will be final and binding on both parties. Further dispute, if any will be settled in the Court of Law at New Delhi jurisdiction only

12. **VALIDITY:** The Tenders should be valid for 180 days from the date of opening.

13. **REJECTION:** Incomplete, conditional, fax, late tenders and tenders without EMD will be rejected summarily. Director General, National Institute of Solar Energy reserves the right to reject any or all the tenders at his discretion without assigning any reason whatsoever.

14. **Payment Terms:**

Payment will be considered against irrevocable Letter of Credit on presentation of the following documents without discrepancies:

- Clean Master Airway Bill/House Airway Bill in original.
- Commercial invoice in quadruplicate.
- Packing list in duplicate.
- Manufacturer's certificate of warranty/guarantee, the inspection and calibration report.
- Certificate of origin.
- Copy of the negotiable bill of binding.
- Address/Tel/Fax number of your banker.

15. **SUBMISSION OF TENDERS :** Sealed tenders are to be submitted in two parts i.e. **Part-I containing Technical competence/literature along with Demand Draft for**

EMD, and Part-II containing only commercial invoice in a separate sealed envelope, super scribed as commercial bid. Both the technical and commercial envelopes should be kept in large size sealed envelope super-scribed Six numbers of 15 kVA Solar Array Simulator due for opening on 15th July, 2016 and addressed to: DDG (SPV), National Institute of Solar Energy, Gurgaon – Faridabad Road, Gwal Pahari, Gurgaon 122003, Haryana, India.

**DR. O.S.SASTRY
DIRECTOR GENERAL**