



NATIONAL INSTITUTE OF SOLAR ENERGY
An autonomous Institute of Ministry of New & Renewable Energy)
GURGAON

**NOTICE INVITING TENDER FOR SUPPLY, INSTALLATION ETC. OF COMPUTER CONTROLLED,
DEEP LIFE CYCLE TESTING CIRCUITS FOR BATTERIES**

Sealed Tenders are invited by office of the Director General, National Institute of Solar Energy in two parts (Technical and Commercial separately) from original manufacturers/authorized agents for design, engineering, manufacture, supply, installation and commissioning of **computer controlled, deep life cycle testing circuits for batteries** as per International Standard at National Institute of Solar Energy, Gwal Pahari, Gurgaon, Haryana, India. The bidders must have already supplied such or superior system in India or abroad and a report on the performance of the systems from the client must be enclosed. A clientele list should also be furnished along with the Technical Bid. Please visit Ministry of New & Renewable Energy website: www.mnre.gov.in or NISE website www.nise.res.in for complete Tender Document and detailed Specifications.

Sealed tenders may be submitted in two parts i.e. Part-I containing Technical Bid 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 as tender for "**computer controlled, deep life cycle testing circuits for batteries**" and addressed to: Dr. Rajesh Kumar, Deputy Director General, National Institute of Solar Energy, Gurgaon – Faridabad Road, Gwal Pahari, Gurgaon 122003, Haryana, India. Closing time and date for receipt of tenders at NISE will be 2nd January, 2015.

F.No.16/19/2014-NISE
National Institute of Solar Energy
19th Mile Stone, Gurgaon-Faridabad Road,
V. & P.O. Gwal Pahari, Distt. Gurgaon (HR).
Phone: 091-124-2579212
Fax: 091-124-2579207; 091-11-24360331.

Tender Document

Sub: Tender for design, engineering, manufacture, supply, installation and commissioning of computer controlled deep life cycle testing circuits for batteries at National Institute of Solar Energy, MNRE, Govt. of India – reg.

On behalf of the Director General, National Institute of Solar Energy, sealed tenders are invited in two parts (Technical and Commercial separately) from original manufacturers/ authorized agents for design, engineering, manufacture, supply, installation and commissioning of **computer controlled, deep life cycle testing circuits for batteries for carrying out Routine and Type Tests on various batteries** as per the International Standard at National Institute of Solar Energy, Gwal Pahari, Gurgaon, Haryana, India. The bidder must have already supplied such or superior system in India or abroad and a report on the performance of the systems from the client must be enclosed. A clientele list should also be furnished along with the Technical Bid.

1.	TENDER NO.	16/19/2014-NISE
2.	Details of equipment	Computer controlled deep cycle testing circuits for batteries as per the International Standard.
3.	Quantity	Please refer to the detailed specifications
4.	Description of the computer controlled, deep cycle testing equipment for batteries	Please refer to the detailed specifications
5.	Earnest Money Deposit (EMD)	Rs.6,00,000/- (Rupees six lakh only)
6.	Addressed to	Dr. Rajesh Kumar, Deputy Director General, National Institute of Solar Energy, 19 th Mile Stone, Gurgaon – Faridabad Road, V & P.O. Gwalpahari, Distt. - Gurgaon, Haryana, 122003, India.
7.	Last date of receipt of bids	2 nd January, 2015

2. SCOPE OF CONTRACT:

The supply should cover the design, engineering, manufacture, supply, Installation, commissioning & testing of **computer controlled, deep life cycle testing circuits for batteries** along with options, accessories, spares and consumables for ten years, packaging and forwarding, installation, commissioning, trial testing at National Institute of Solar Energy and providing training to personnel at National Institute of Solar Energy. The system should be installed & commissioned at National Institute of Solar Energy, Ministry of New and Renewable Energy, Gurgaon-Faridabad Road, Gwal Pahari, Gurgaon-122003, Haryana, India.

Specification for computer-controlled deep life cycle testing circuits for the purpose of battery testing at NISE

Sr. No	Parameter	Specification per Circuit	Quantity
1.	Discharge Voltage (DC, V)	20 to 0 V	<p>6 no's</p> <p>Should have provision for paralleling the circuits to raise the current limit of any number of circuits.</p> <p>One of the circuits should be of assignable type for cell voltage monitoring in the value of 5Vx4=20V.</p> <p>Each circuit should have individual temperature sensor and one reference temperature sensor.</p>
	Charge Voltage (DC, V)	0 to 20V	
	Discharge /Charge voltage accuracy	0.01 V	
	Discharge/Charge Circuit Current (DC, A)	0-100 A	
	Discharge/Charge current Accuracy	± 0.001A	
2.	Discharge Voltage (DC, V)	20 to 0 V	<p>2 no's</p> <p>Should have provision for paralleling the circuits to raise the current limit.</p> <p>One of the circuits should be of assignable type for cell voltage monitoring.</p> <p>Each circuit should have individual temperature sensor and one reference temperature sensor.</p>
	Charge Voltage (DC, V)	0 to 20	
	Discharge /Charge voltage accuracy	0.01 V	
	Discharge/Charge Circuit Current (DC, A)	0-300 A	
	Discharge/Charge current Accuracy	± 0.001A	
3.	Discharge Voltage (DC, V)	100 to 0 V	<p>2 no's</p> <p>Should have provision for paralleling</p>
	Charge Voltage (DC, V)	0 to 100V	
	Discharge /Charge voltage accuracy	0.01 V	
	Discharge/Charge Circuit Current (DC, A)	0-100 A	

	Discharge/Charge current Accuracy	$\pm 0.001A$	<p>the circuits to raise the current limit.</p> <p>One of the circuits should be of assignable type for cell voltage monitoring.</p> <p>Each circuit should have individual temperature sensor and one reference temperature sensor.</p>
	Discharge modes	Constant current/ constant power, constant resistance	
	Charge Mode	Constant current/ Constant voltage, Constant power	
	Parameters to be monitored	Ah, Wh, Number of cycles, steps and step times, total time, power, current, temperature, battery terminal voltage, mode of operation, internal resistance and conductance	
	Switching time	Constant current/ Constant power, Constant resistance	
	Input Power	240 \pm 10% VAC, 1 \emptyset , 50 Hz.	
	Test leads for measuring the individual Cell /battery voltages	Minimum 6 meters length/circuit.	
	Other facilities required	<p>Hardware package: USB 3.0 interface is preferred.</p> <p>Identical circuits should be placed in a single cabinet.</p> <p>Each cabinet should be accompanied with individual PCs of latest configuration and attached Color Laser printer or equivalent and related software for interfacing between PC and machine to print all the above said parameters.</p> <p>The software should be user friendly and compatible with MS Office 2013 package to trace the data saved or plotted.</p>	
	Emergency Stop	Input to disconnect AC power in case of emergency to be provided. Provision for stopping particular circuit should be provided	
	Digital temperature readout	Facility to read temperature of the cell/battery and electrolyte to be provided.	
	Measurement of internal resistance	Provision to measure internal resistance of the cell/battery to be provided. Digital functioning is preferred.	
	Data protection	Battery backed memory in each circuit to be provided to protect	

		data and test progress against power outages.
	Warranty	Comprehensive warranty for 3 years should be available.
	Service manual along with circuit diagram	Two copies to be provided (both in hard copy and soft copy)
	Spare parts	Minimum spares for 10 years operation should be available
	Data processing	Data should be available for post processing in the excel format /EBC /ASCII
	Sampling rate	Data acquisition at the rate of 100 readings per second should be possible.
	Software support	Genuine application and system software compatible with latest version of windows to be provided

4. Documentation:

D1:

- One set of Operation Manual complete with drawings, parts list (with part codes), circuit diagrams with list ratings of components and list of do's and don'ts for the main equipment as well as the sub-systems.
- One set of Maintenance Manual with full information on drawings, circuit diagrams, list and suppliers addresses for bought out parts, troubleshooting charts, programs of built in controllers etc. for the main equipment as well as for the sub-system.
- These manuals should be in the form of hard (printed) copy in English Language as well as in electronic storage form (disc, pen drive etc.).
- A certificate for the adequacy of the manuals should be obtained and provided with the manuals.
- Such certificate must be signed by the QA engineer of the manufacturer.

D2:

- Calibration certificates for the measuring devices in electronic storage form (disc, pen drive etc.). A certificate for the adequacy of the manuals should be obtained and provided with the manuals. Such certificate must be signed by the QA engineer of the manufacturer.

5. General:

- a. Installation, commissioning & trials to demonstrate proper functioning of the system will be the responsibility of the supplier.
- b. Preference shall be given to the suppliers who have their local service Centre (agents) in India.
- c. The manufacturer have to supply the required reference modules and monitor cells along with the calibration report from the authorized calibration laboratory.

6. EARNEST MONEY DEPOSIT (EMD)

A sum of Rs.6.00 lakh (Rupees six lakh only) should be submitted as Earnest Money Deposit (EMD) **along with the technical bid** in the form of nationalized bank's demand draft 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.

7. **RATES:** The rates should be quoted specifically on the following lines:

- a. Firm and final price of the **computer controlled, deep cycle testing circuits for batteries** as per the above specifications and features along with options, accessories, spares and consumables for ten years as per the above specifications and features.
- b. Taxes and freight etc. applicable, if any, should be indicated separately and clearly.

8. **DELIVERY PERIOD:** The **computer controlled, deep cycle testing circuits for batteries** in all respects as per the above specifications and features along with options, accessories, spares and consumables for ten years should be delivered in a single consignment at the site/consignee within 4 months from the date of issue of confirmed supply order.

9. **INSPECTION:** The supplier should satisfy himself/herself that the **computer controlled, deep cycle testing circuits for batteries** in all respects as per the above specifications and features along with options, accessories, spares and consumables for ten years, fully conforms to the specifications by carrying out complete pre-inspection of each component before dispatch.

10. **CONSIGNEE:** Director (Battery-Testing), National Institute of Solar Energy, Ministry of New and Renewable Energy, V & P.O. Gwal Pahari, Distt. Gurgaon, Haryana, India.

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

12. 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 reason 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.

13. **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.

14. VALIDITY: The Tender should be valid for 180 days from the date of opening.

15. 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.

16. 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 as tender for **“computer controlled, deep cycle testing circuits for batteries”**. The tender shall be addressed to:

Dr. Rajesh Kumar,
Deputy Director General,
National Institute of Solar Energy,
19th Mile Stone, Gurgaon – Faridabad Road,
V & P.O. Gwalpahari,
Distt. - Gurgaon, Haryana, 122003, India.

IMPORTANT DATES

a. Closing time and date for receipt of tenders at NISE is 2nd January, 2015

b. Participants will be intimated about the time and date for opening of Technical Bids.

It may please be ensured that the main tender envelope should be clearly super-scribed – Tender for **“Computer controlled deep cycle testing circuits for batteries”**

Director (Admin)
National Institute of Solar Energy