भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद

धनबाद, झारखण्ड, भारत, पिन-826004

INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD

DHANBAD, JHARKHAND, INDIA, PIN-826004

(An Institute of National Importance under Ministry of H.R.D., Govt. of India)

STORES & PURCHASE SECTION Phone:(0326) 2235678 || Email : drps@ismdhanbad.ac.in || Website : www.iitism.ac.in

No. EE-500505-2016-17 Date: March 23, 2017

NOTICE INVITING TENDER

Subject: A Complete set-up of 1 kWp PV system for standalone application.

Indian Institute of Technology (Indian School of Mines), Dhanbad invites quotations for the following to be supplied and delivered in EE Department.

S No	Full Description of items/ store	Qty	Delivery
1	**Supply & Installation of A Complete set-up of 1 kWp PV system for standalone application.** (Detailed Specification is given in Annexure – I A)	01 No	At the Earliest /Ex-Stock
2	**Supply & Installation of A Complete set-up of multileved inverter based 1 kWp PV systen for feeding power to induction motor.** (Detailed Specification is given in Annexure – I B)	01 No	

Tender Schedule

Particulars	Date & Time
Last date for seeking clarification/s (if any)	**13.04.2017 at 3:00 P.M.**
Last date and time for submission of tenders	**18.04.2017 at 3:00 P.M.**
Date and time of opening of tenders	**18.04.2017 at 4.00 P.M.**

1. You are requested to quote your lowest rates for the supply of above items in the attached format for Financial Bid (Annexure – II)
2. Clarification(s) sought after the prescribed date shall not be entertained.
3. You may send your representative in the office of the undersigned at the scheduled date and time of opening of tender.
4. Tender should be submitted in sealed cover only superscribed with Enquiry No. and due date at the following address only:

The Deputy Registrar (P&S)
Indian Institute of Technology (Indian School of Mines),
Dhanbad – 826 004 Jharkhand
P: 0326-2235612
E: drps@ismdhanbad.ac.in

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Terms & Conditions

1) The rates should be quoted for each item separately.
2) Conditional offer will not be accepted.
3) IIT (ISM) does not issue any Form 'C' or 'D' towards sales tax concessional rate. Hence, full rate of sales tax/VAT applicable should be quoted.
4) ***Educational discount,*** if any, should be clearly mentioned.
5) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
6) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
7) Please mention warranty/ guarantee in your offer clearly. Material/ equipment to be supplied must have minimum warranty/guarantee of **12 months.**
8) *Each page in the bid document must be numbered properly* and duly signed & sealed by the bidder on every page of the bid.
9) **The items/ materials shall be required to be delivered at EE Department/ Section through Purchase & Store Section, IIT (ISM) Dhanbad** at the risk and cost of the tenderer.
10) Unloading and installation shall be the complete responsibility of the supplier.
11) The stores are required to be delivered within 30 days. Late delivery may not be accepted.
12) The items offered should be of good quality confirming to BIS standards, wherever applicable.
13) ***Advance payment is not admissible.*** Payment shall normally be made within 3-4 weeks subject to receipt and acceptance & installation (as per Purchase Order Terms) of the ordered materials/items.
14) In the event date on which the tender is opened for acceptance is declared to be a holiday, the tenders shall be deemed to remain open for acceptance till the next working day.
15) Please send your offer by Regd.Post/ Speed Post/ Courier along with Courier receipt. Tender/ quotation will be received during IIT (ISM) working hours only (i.e. Monday to Friday). *Late or delayed tenders shall be summarily rejected.*
16) Any other information that you may like to obtain, you are free to contact IIT (ISM) before submission of tender.
17) IIT (ISM) reserves the right to accept and/or to reject any/ all tenders without assigning any reason.

27/3/17
Assistant Registrar

Annexure – 1A

(B)

Specification details of 1 kWp Solar Photovoltaic set-up for standalone alone application

1. Solar Panel	• 1 KWp solar panel
2. Solar MPPT charge Controller	• Solar MPPT charge controller of 40A • Load power balancing operation (non-MPPT mode) when battery full. • MOSFET/IGBT based PWM switching. • Advanced high speed micro-controller based control.
3. Solar Inverter	• Single-phase high speed IGBT based SINUSOIDAL digital PWM based power inverter of 2 kW power rating. • Output voltage of 230V, 50Hz. • Output voltage regulation at rated output. • Soft start of voltage and frequency during starting. • Inverter voltage synchronization and auto change-over to grid mode when battery low or commanded by user. • Grid voltage synchronization and change-over to Inverter mode when battery full or required by user. • IGBT based two level switching • Auto-change over of load to inverter with grid failure through transfer switch.
4. Battery for back-up	• 4 numbers of 12V of 100 AH backup in case of grid failure and absence of SOLAR
5. Grid Charging	• Grid charging of battery through Inverter in the absence of SOLAR • Maximum charging current of 15A • Auto change-over to inverter mode if grid failure occurs
6. Complete control	• Development of complete control system using advanced TMS320F280xx (fixed point processor with flexibility to realize floating point operation) series based micro-controller. • Sampling of analog signals using 12 bit ADC: solar voltage, solar current, battery current, output voltage, output current, heatsink temperature at very high speed. • Protection: output short circuit, output over current, over temperature etc
7. LCD Display	• 4 line, 20 character LCD display • Display parameters: solar voltage, solar current, battery current, output voltage, output current, heatsink temperature, STATE, fault if any.
8. Load	• 1 kW inductive load

Annexure – 1B

Specification details of Multi-level Inverter based 1 kW Solar Photovoltaic Feeding Power Induction Motor

1. Solar Panel	• 1 KWp solar panel
2. Solar MPPT charge Controller	• Solar MPPT charge cohtroller of 40A • Load power balancing operation (non-MPPT mode) when battery full. • MOSFET/IGBT based PWM switching. • Advanced high speed micro-controller based control.
3. Solar Inverter	• Single-phase high speed IGBT based multi-level SINUSOIDAL digital PWM based power inverter of 2 kW power rating. • Rated output voltage of 230V, 50Hz, sinusoidal PWM based control. • Output voltage regulation at rated output. • Soft start of voltage and frequency to limit inrush current. • Inverter voltage synchronization and auto change-over to grid mode when battery at low level or at any time required by user through an input command. • Grid voltage synchronization and change-over to Inverter mode when battery full or required by user. • IGBT based multi-level switching • Auto-change over of load to inverter with grid failure through transfer switch.
4. Battery for back-up	• 4 numbers of 12V of 100 AH backup in case of grid failure and absence of SOLAR
5. Grid Charging	• Grid charging of battery through Inverter in the absence of SOLAR • Maximum charging current of 15A • Auto change-over to inverter mode if grid failure occurs
6. Complete control	• Development of complete control system using advanced TMS320F280xx (fixed point processor with flexibility to realize floating point operation) series based micro-controller. • Sampling of analog signals using 12 bit ADC: solar voltage, solar current, battery current, output voltage, output current, heatsink temperature at very high speed. • Protection: output short circuit, output over current, over temperature etc
7. LCD Display	• 4 line, 20 character LCD display • Display parameters: solar voltage, solar current, battery current, output voltage, output current, heatsink temperature, STATE, fault if any.
8. Load	• Suitable single-phase induction motor load

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Annexure - II

Format for Financial Bid

NIT No.: EE-500505-2016-17 Dated:

Bidders Ref: No. Dated:

Sub: Supply & Installation of A Complete set-up of 1 kWp PV systen for standalone application and Supply & Installation of A Complete set-up of multileved inverter based 1 kWp PV systen for feeding power to induction motor.

Sl. No.	Full Description of Items	Qty.	Rate	Amount
		Packing & Forwarding (if any)		
		Total		
		CST/VAT (if any)		
		Freight (if any)		
		Installation (if any)		
Amount should be in figure as well as word		**Grand Total**		

Note:
1) All the details must be provided as per prescribed format only
2) Prices quoted by the bidders should include all local taxes, VAT, service tax, duties, livies, transportation cost and insurance costs etc. if any
3) All the rates must be quoted in Indian Rupees.