



DAYALBAGH EDUCATIONAL INSTITUTE
DAYALBAGH, AGRA-282005

Notice Inviting tenders

Limited tender No: DEI/Engg/Elect/GPR/TDR-26

Date: 01-01-2016

Sealed limited tenders are invited from the Manufacturers/ Suppliers/Authorized dealers/ agencies for the supply of following items as detailed below:-

S.No.	DESCRIPTION OF ITEMS	QUANTITY
1	Wind Energy Training System	One
2.	Solar Thermal Training System (Flat Collector Based)	One
3.	Solar PV Grid Tied Training System	One
4.	DC-DC & DC-AC Converter System	One
	*Please see full specification mentioned below	

The tenderer shall be required to submit the Earnest Money Deposit (EMD) for an amount of **Rs. 30,800/-** by way of demand drafts/banker's cheque/FDRs which is refundable and a non-refundable tender fee for an amount of **Rs. 200/- (Rupees two hundred only)** by Cash or Demand draft. The demand drafts shall be drawn in favour of "Registrar, Dayalbagh Educational Institute, Agra" payable at Agra. The demand drafts (validity 45 days beyond final bid) for earnest money deposit & tender fee must be enclosed in the envelope containing the bid documents addressed to :

**"The Registrar
Dayalbagh Educational Institute,
Dayalbagh, Agra – 282005,
Uttar Pradesh"**

Note: Central Purchase Organization, Small Scale Industries/ National Small Scale Industries Corporation shall be exempted from payment of Earnest Money Deposit. Tenderers seeking exemption should enclose a self attested photocopy of valid registration certificate with NSIC.

(The Earnest Money will be liable to be forfeited if quotation is not honored or if contract is not signed with the Institute, after the award is made to the Tenderer)

1. Time and last date of submission of the Bid: 02.00 pm on 22.01.2016
2. Time of Bid Opening: 02.30 pm on 22.01.2016
3. Venue of Bid Opening: Conference Hall , CAO, Dayalbagh Educational Institute.

Interested Suppliers/Authorized dealers may put the tender document complete in all respect and other requisite documents in the tender box kept in the General Section, CAO, Dayalbagh Educational Institute, Dayalbagh, Agra- 282005. The tenders shall not be entertained after this deadline under any circumstances whatsoever. For more details please visit Institute's website <http://www.dei.ac.in>.

**Registrar
Dayalbagh Educational Institute**

*Please see full specification mentioned below:-

SPECIFICATIONS

1 Wind Energy Training System

1.1 Technical Specifications

Sl. No.	Components	Sub-Components	Specific
1	Generating unit	Generator	
		Type	PMSG (3 phase)
		Power rating	300 (W)
		Rotor	
		No. of blades	3
		Swept area	1.4 (m^2)
		Performance parameter	
		Rated wind speed	12.5 ($\frac{m}{sec}$)
		Power generation at rated speed	300(W)
		Cut-in speed	3.5 ($\frac{m}{sec}$)
		Cut-out speed	23 ($\frac{m}{sec}$)
		Blade	
		Length:	0.67 (m)
		Material	Carbon fiber
2	Artificial Wind generating unit	Induction motor	
		Power rating	15 (HP)
		Generated wind speed range	0-15 m/sec
3	Control Unit	Battery	
		Capacity	42 (Ah)/12V

		Inverter	
		Rated power	650(VA)
		Input voltage	10-15(V)
		Charge controller	
		Rated power	400(W)
		Rated load voltage	12 (V)
		DC voltmeters/ammeter	
		AC voltmeters/ammeter	
		Power analyzers	
		Current rating	18 A
		Tachometer with sensor	
		Anemometer	
4	Accessories	Manual	

1.2 Required Features

- Wind speed can be controlled externally
- Turbine can be replaced
- System can be expanded to develop a hybrid system
- Performance can be evaluated from low wind speed to high wind speed

2 Solar Thermal Training System (Flat Plate Collector Based System)

2.1 Technical Specifications

Sl. No.	Components	Sub- Components	Specifications
1	Flat Plate Collector	Collector Box	
		Length	915 (mm)
		Breadth	810 (mm)
		Glazing Surface	
		Type of glass	Toughen
		Absorber plate	
		Absorber material	Copper
2	Hot Water Tank	Tank Type - Non Pressurized	
3	Control unit	Temperature meter with sensors	
		Pressure meter with sensor	
		Flow meter with sensor	
		Flow regulator	
4	Artificial source of radiation	Halogen Fixture with regulator	
		Power rating	3200 (W)
5	Artificial source of wind speed	Wind speed range	0 to 5 (m/sec)
6	Accessories	Radiation meter	
		Range	0 to 1999 ($\frac{W}{m^2}$)
		Anemometer	
		Wind speed Range	0.4 to 45.0 (m/sec)

		Temperature range	-14 to 60 (⁰ C)
		External tank	
		Number	2
		Hot water pump	
		Manual	

2.2 Required Features

- Artificial source of radiation
- Control of radiation level as per requirement
- Artificial source of wind speed
- Provision to set the wind speed as per requirement
- Inbuilt facility analogous to rooftop and hot water tank
- Compatible to perform experiment in both outdoor and indoor environment
- Provision to perform experiment in both Thermosyphonic and force mode of operation

3 Solar PV Grid-Tied Training System

3.1 Technical Specifications

Sl. No.	Components	Sub-Components	Specifications
1	Power generating unit	Solar PV Module	
		Number of modules	2
		Type	Poly-crystalline
		Total power	500 W _p
2	Solar PV Grid Tied Inverter		
		No of Grid Tied Inverter	1
		MPPvoltage range	45 Vto 100V
		Rated gridvoltage	230V
		Maximum outputcurrent	2.5A
		Rated power	300W
		Rated frequency	50Hz
		Feedingphases	single-phase
3	Virtual Grid		
		Nominal Output Voltage	230V AC
		Frequency	50Hz
		Capacitor Bank	
		Transmission Line Inductance	
4	Measurement Unit	Isolated Sensors	
		AC Voltage Sensor	
		AC Current Sensor	
		Power Analyzers – 2	
		Ammeter –AC	
5	Accessories	Manual	

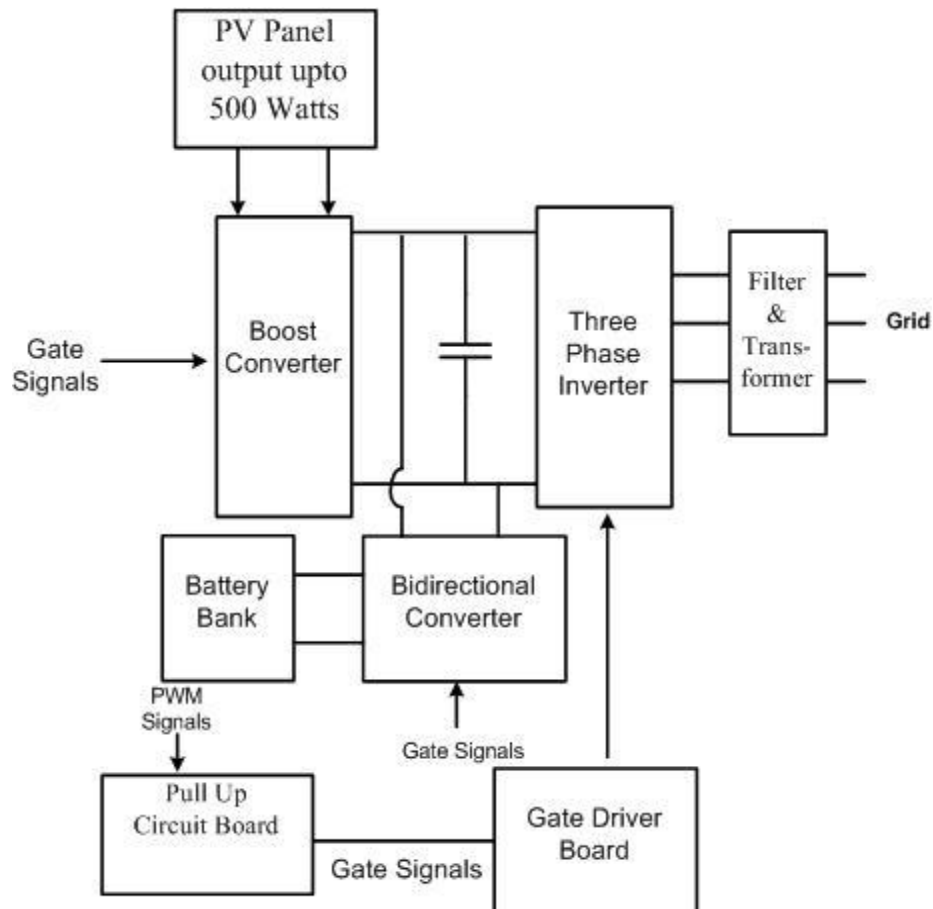
3.2 Required Features

- Virtual Grid
- Automatic Solar Power Priority
- Active, reactive and apparent power flow tracking
- Net Metering indicating net import/export of energy from/to grid
- Anti-Islanding protection
- Variable Line inductance, capacitance of grid

4 DC-DC & DC-AC Converter System

4.1 Technical Specifications

DC DC Converter and Inverter System with Varying Gate Control



Components and Rating:

S. No.	Component	Specification
1.	PV Panel <ul style="list-style-type: none">• Voc	43.2 V

	<ul style="list-style-type: none"> Isc Power Vmpp Imp 	7.5 A 250 Wp 35.0 V 7.14 A
2.	Boost Converter <ul style="list-style-type: none"> Input voltage Input Current Maximum Switching Frequency Gate Signal Voltage 	0-200 V 0-34 A 60 Khz 5 V peak-peak
3.	Bidirectional Converter <ul style="list-style-type: none"> Input voltage Input Current Maximum Switching Frequency Gate Signal Voltage DC Link Capacitor Input inductor value 	0-200 V 0-34 A 60 Khz 5 V peak-peak 470 micro farad,450 V 3 mH
4.	Three Phase Inverter <ul style="list-style-type: none"> 3 Leg inverter Maximum DC Input Voltage Maximum Output Current Output Rating Switching Frequency 	150V DC 10A 1000VA 10kHz
5.	Step UP Power Transformer <ul style="list-style-type: none"> Connection Rating 	Delta to Star 1000VA
6.	Three Phase LC Filter <ul style="list-style-type: none"> Inductor Capacitor 	3mH, 10A 10μF, 400V

TERMS AND CONDITIONS

1`) The company should demonstrate the prior experience of supplying same products to IITS and NITS.

2) Purchase Orders of IITs and NITs to be submitted for same products.

3) Client Contact List of same products are to be submitted.

4) Client Testimonials for same products are to be submitted.

5) Original Photographs of same products are to be submitted.

6) Physical Demonstration of same products will be required before finalizing the Tender.

General Terms & Conditions

Note: Bidders must submit the following primary information/documents with the quotation. Bidders will have to indicate these particulars in their quote failing which the offer may be rejected. Please do produce the related documents whenever required by the Institute.

1. Trade License/Company Registration No.
2. VAT / Service Tax Regn. No.
3. Income Tax PAN No.
4. Firm's Bank A/c details
5. Bidders are requested to quote rate(s) per unit(s) only in the recognized Accounting units otherwise your quotation will not be accepted.
6. Cost of items shall include installation, support and troubleshooting.
7. Warranty and Support: for Hardware and Software should be explicitly mentioned.
8. Bidders should be OEM/Authorized partner/Authorized dealer of OEM.
9. Bidders should quote rates as per details/specifications mentioned in notice inviting Tender. The Institute reserves the right to place order for each job to single/separate vendor(s) if necessary.
10. Bidders should quote rates on FOR/Free Delivery at the sites specified in the Notice inviting Tender, inclusive of all charges else should mention estimated cost of packing, forwarding, insurance and freight by Rail/Road/Post etc. as the case may be.
11. Bidders must indicate if their rate is inclusive of VAT/Sales Tax and /or Excise Duty.
12. Quotation received after the closing date will not be entertained and revision in the price will render the bid invalid. Quotation should indicate clearly the period of Validity, preferably not less than 45 days.
13. In case of an offer for items having multiple options, you should clearly indicate item-specific price(s). Please quote separate item-wise rate(s), when quotation has been asked for so. For every offer, packing and forwarding charges, Sales/VAT/Service Tax etc. should be shown separately.
14. Bids will be evaluated after equated comparison of offers upon calculating all tax/duty/cess/surcharge/discount/packing/transportation costs, other charges with price and non-compliance of technical and commercial terms will render a bid liable for rejection.
15. Bidders will have to submit Bills/Invoices on dispatch of stores, if ordered, to this office in triplicate duly pre-receipted (and stamped for amount over Rs. 5000/-) and supported by the relevant delivery documents for audit and payment direct to you or to your bankers. Generally, payments can be expected within one month and are made against acceptance of supplies/ jobs completed and in deserving cases, against shipment documents.
16. No insurance charges are allowed unless otherwise specified and agreed to by us. In the absence of any specific instructions, it will be the responsibility of the supplier to ensure a consignment against transit risk at his own expense if he so desires.
17. The Institute is not bound to accept the lowest rate or any other offer and the acceptance of the offer is entirely at the discretion of the Committee.
18. All purchases are subject to the approval of the Governing Body of the Institute.
19. The Institute reserves the right to select certain items in single or multiple units and reject the others or all as mentioned in the schedule and to revise or alter the specifications before acceptance of any tender and accept or reject any or all tenders, wholly or partly or close the tender without assigning any reason whatsoever.

20. The Bidder shall be required to submit the amount of Earnest Money Deposit (EMD) Rs.30,800/- as mentioned in the Notice Inviting Tender which is refundable and a non-refundable tender fee for an amount of Rs 200/- (Rupees two hundred only) by way of demand drafts/banker's cheque / FDRs. The demand drafts shall be drawn in favour of "Registrar, Dayalbagh Educational Institute, Agra" payable at Agra. The demand drafts (validity 45 days beyond final bid) for earnest money deposit & tender fee must be enclosed in the envelope containing the bid.
- a.) The firm(s) that are registered with the National Small Industries Corporation (NSIC) / or Small Scale Industries (SSI) are exempted from furnishing the EMD. Self-attested photocopy of the valid registration certificate must be enclosed with their bid.
 - b.) The demand drafts for EMD & tender fee must be enclosed in the envelope containing the technical bid and super-scribed with tender number and due date of submission on it, in case of two bid system. Any technical bid is found without the demand drafts of EMD and tender fee will be rejected. The Institute will not be liable to pay any interest on such an amount. The EMD shall be forfeited, if the Bidder withdraws its bid during the period of validity of Tender.
21. Arbitration and Laws: In case of any dispute or difference arising out of or in connection with the tender conditions / order and Contract, the Institute and the Supplier will address the dispute / difference for a mutual resolution and failing which, the matter shall be referred for arbitration to a sole Arbitrator to be appointed by the Institute. The Arbitration shall be held in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the venue of arbitration shall be at Agra only. The resolution of the Arbitrator shall be final and binding on both the parties.
22. Jurisdiction: The courts at Agra alone will have the jurisdiction to try any matter, dispute or reference between parties arising out of this tender /contract. It is specifically agreed that no court outside and other than Agra court shall have jurisdiction in the matter.

Registrar, DEI