Institute of Engineering & Technology, Lucknow,Sitapur Road, Lucknow,
Uttar Pradesh - 226021

INVITATION LETTER

IET/TEQIP-III/2019/228

Package Code: TEQIP-III/2019/UP/ietl/245
Package Name: IET-TEQIP-ME-LAB-8

Current Date: 05-Jul-2019
Method: Shopping Goods

Sub: INVITATION LETTER FOR IET-TEQIP-ME-LAB-8

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Item Name	Quantity	Place of Delivery	Installation Requirement (if any)
1	SOLAR PV TRAINING & RESEARCH SYSTEM	1	Institute of Engineering and Technology, Lucknow	
2	SOLAR CONCENTRATOR TRAINING SYSTEM (PARABOLIC TROUGH COLLECTOR BASED)	1	Institute of Engineering and Technology, Lucknow	
3	THERMAL ENERGY STORAGE SYSTEM	1	Institute of Engineering and Technology, Lucknow	
4	SOLAR THERMAL TRAINING SYSTEM (FLAT PLATE COLLECTOR BASED SYSTEM)	1	Institute of Engineering and Technology, Lucknow	
5	Wind Energy Training System	1	Institute of Engineering and	

			Technology, Lucknow	
6	PYRANOMETER	1	Institute of Engineering and Technology, Lucknow	
7	Solar PV Grid-Tied Training System	1	Institute of Engineering and Technology, Lucknow	

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.

3. **Quotation**

3.1 The contract shall be for the full quantity as described above.

3.2 Corrections, if any, shall be made by crossing out, initialling, dating and re writing.

3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit Price.

3.4 Applicable taxes shall be quoted separately for all items.

3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.

3.6 The Prices should be quoted in Indian Rupees only.

4. Each bidder shall submit only one quotation.

5. Quotation shall remain valid for a period not less than **60**days after the last date of quotation submission.

6. Evaluation of Quotations: The Purchaser will evaluate and compare the quotations determined to be Substantially responsive i.e. which

6.1 are properly signed; and

6.2 Confirm to the terms and conditions, and specifications.

7. The Quotations would be evaluated for all items together.

8. Award of contract The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of Contract.

8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be Incorporated in the purchase order.

9. Payment shall be made in Indian Rupees as follows:

Satisfactory Delivery & Installation and Acceptance - 100% of total cost

10. Liquidated Damages will be applied as per the below:
Liquidated Damages Per Day Min % :0.50
Liquidated Damages Max % : 10

11. All supplied items are under warranty of **36** months from the date of successful acceptance of items and AMC/Others is .

12. You are requested to provide your offer latest by **14:30** hours on **22-Jul-2019.**

13. Detailed specifications of the items are at Annexure I.

14. Training Clause (if any) **YES**

15. Testing/Installation Clause (if any) **YES**

16. Performance Security shall be applicable: **5%**

17. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.

18. Sealed quotation to be submitted/ delivered at the address mentioned below, **TEQIP-III Institute of Engineering & Technology, Lucknow,Sitapur Road, Lucknow, Uttar Pradesh - 226021**

19. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)
Name & Designation

COORDINATOR
TEQIP PHASE-III
Institute of Engineering &
Technology, Lucknow-21

Annexure I

Sr. No	Item Name	Specifications
1	SOLAR PV TRAINING & RESEARCH SYSTEM	➢ **Solar PV module** • Number of modules: 2 • Type: Poly-crystalline • Total power rating: 80 Wp ➢ **Halogen Light with Regulator** • Total power rating: 1800 W ➢ **Power conditioning unit:** • Power rating: 25 W • Nominal system voltage: 12 V • Maximum load current: 2.0 A • Type: Buck converter • Power rating: 50 W • Output voltage: Variable ➢ **Control & measuring unit** • Temperature meter with sensor • DC ammeter • DC voltmeter • AC ammeter • AC voltmeter • Capacity of each battery: 4.5 Ah/12V ➢ **Accessories:** • Radiation meter • Battery charger • Module cooling system • Manual
2	SOLAR CONCENTRATOR TRAINING SYSTEM (PARABOLIC TROUGH COLLECTOR BASED)	➢ **Parabolic Trough Collector** • Reflecting material: SS • Length: 1219.2 mm • Arc length (perimeter): 1828.8 mm ➢ **Absorber Tube** • Number: 2 • Absorber material: Copper, SS ➢ **Tracking system** • Mode of tracking: Single axis

		➢ **Supply tanks** • Material: SS • Number: 2 ➢ **Storage tank-1** • Material: SS ➢ **Storage tank-2 (with heat exchanger)** • Material: SS • Storage tank insulation ➢ **Sensors and regulators** • Temperature meters with sensors • Flow meter with sensor • Flow regulator ➢ **Radiation meter** • Range: 0 to 1999 W/m^2 ➢ **Anemometer** • Wind speed range: 0.4 to 45 m/sec • Temperature range: -14 to 60 ➢ **Pump-1** • Type: Hot water ➢ **Pump-2** • Type: Hot oil ➢ **Pipe and fitting** • Oil type: Thermal-oil
3	THERMAL ENERGY STORAGE SYSTEM	➢ **Insulated tank** • Material: SS-304 • Capacity: 50 (L) • Electric heater rating: 6000 W ➢ **PCM-1** • Name of PCM: Paraffin wax • Melting temperature: 55(^{o}C) • Heat of fusion: 173 (kJ/Kg) ➢ **PCM-2** • Name of PCM: Organic fatty acid • Melting temperature: 67(^{o}C) • Heat of fusion: 210 (kJ/Kg) ➢ **Heat exchanger**

		• Number: 3 • Heat exchanger tube material: Copper ➢ **PCM holding pipe (shell)** • Number: 3 • Material: SS-304 ➢ **Control units** • Temperature meters • Temperature sensors • Flow meter & Sensors ➢ **External tank** • Number: 2 ➢ **Hot water pump**
4	SOLAR THERMAL TRAINING SYSTEM (FLAT PLATE COLLECTOR BASED SYSTEM)	➢ **Collector box** • Length: 915 mm • Breadth: 810 mm ➢ **Glazing surface** • Type of glass: Toughen ➢ **Absorber plate** • Absorber material: Copper ➢ **Hot water tank** • Tank type: Non pressurizes ➢ **Control unit** • Temperature meter with sensors • Pressure meter with sensors • Flow meter with sensors • Flow regulator ➢ **Halogen fixture with regulator** • Power rating: 3200 W ➢ **Artificial source of wind speed** • Wind speed range: 0 to 5 m/sec ➢ **Radiation meter** • Range: 0 to 1999 W/m^2 ➢ **Anemometer** • Wind speed range: 0.4 to 45 m/sec • Temperature range: -14 to 60(^oC)

		➢ **External tank** • Number: 2 • Hot water pump
5	Wind Energy Training System	➢ **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 m/sec • Power generation at rated speed: 300 W • Cut-in speed: 3.5 m/sec • Cut-out speed: 23 m/sec ➢ **Blade** • Length: 0.67 m • Material: Carbon fiber ➢ **Induction motor** • Power rating: 15 HP • Generated wind speed range: 0-15 m/sec ➢ **Battery** • Capacity: 42 (Ah)/12 V ➢ **Inverter** • Rated power: 650 VA • Input voltage: 10-15 VA ➢ **Charge controller** • Rated power: 400 W • Rated load voltage: 12 V ➢ **DC voltmeters/ammeter** ➢ **AC voltmeters/ammeter** ➢ **Power analysers** • Current rating: 18 A ➢ **Tachometer with sensor** ➢ **Anemometer**

6	PYRANOMETER	➢ **Sensor Inputs** • Solar radiation • Operating temperature: -20 to 70 degree centigrade • Technical specifications for sensors calibration: 0.25 mV/Wm^{-2} • Range: 0 to 1000 W/m^2 • Dimension: 24mm diameter, 25 mm tall.
7	Solar PV Grid-Tied Training System	➢ **Solar PV Module** • Number of modules: 2 • Type: Poly-crystalline • Total power: 500 Wp ➢ **Solar PV Grid Tied Inverter** • No. of grid tied inverter: 1 • MPP voltage range: 45 V to 100 V • Rated grid voltage: 230 V • Maximum output current: 2.5 A • Rated power: 300 W • Rated frequency: 50 Hz • Feeding phases: Single phase ➢ **Virtual Grid** • Nominal output voltage: 230 V AC • Frequency: 50 Hz ➢ **Capacitor Bank** ➢ **Transmission Line Inductance** ➢ **Isolated Sensors** • AC voltage sensor • AC current sensor ➢ **Power Analyzers-2** ➢ **Ammeter-AC**

FORMAT FOR QUOTATION SUBMISSION
(In letterhead of the supplier with seal)

Date: _____

To:_____
_____

Sl. No.	Description of goods \ (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex-Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
Total Cost							

Gross Total Cost (A+B): Rs. _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____ (Amount in figures) (Rupees _____amount in words) within the period specified in the Invitation for Quotations.
We confirm that the normal commercial warranty/ guarantee of _____ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.
We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier
Name: _____
Address: _____
Contact No. _____