

**PONDICHERRY UNIVERSITY, PUDUCHERRY – 605 014**

*(A central University)*

**Centre for Green Energy Technology**

Sealed quotations are invited for the following items under a DST-SERB project. The quotation should be sent by post (normal/speed/registered/courier) only. The price quoted should include all the costs such as delivery, installation, testing etc and also inclusive of all taxes. Warranty terms should be explicitly specified in your quotation. The technical specifications are given below. Last date for receiving quotation is 24.07.2015.

Dr. A. Sreekumar-PI-DST-SERB Project,  
Assistant Professor,  
Centre for Green Energy Technology,  
Pondicherry University,  
Puducherry-605 014.

**Name of the required items for DST-SERB Project:**

1. **Digital Thermo Anemometer**
2. **Thermal Conductivity Analyzer**
3. **Data Logger & RTD Sensors**
4. **Solar Air Heaters**
5. **PCM integrated Solar Air Cum Water Heater**
6. **PCM integrated solar cabinet drier cum water heater**

## TERMS AND CONDITIONS

### I. General Information:

- a) **Last date and time of receipt of the Tender: 24.07.2015 at 2.30 PM and they will be opened on 24.07.2015 at 3.00 PM**
- b) **Quotation/ Tender document Fee: Rs. 500/-**
- c) **EMD rates: 2.5% of the Quoted price (for Equipments above Rs. 50,000/-)** through Demand Draft, drawn in favour of The Finance Officer, Pondicherry University, payable at Puducherry.
- d) Quoting merely the lowest price does not confer any right to any bidder for award of supply order. The University's Purchase Committee, reserves the right to select the equipment any bid under the grounds of specification compliance, technologically advanced quality, proven performance track record, brand reputation, service backup support & training, offer of additional / special features, compatibility with the existing system, etc.
- e) The Quotation/Tender Document Fee and EMD should be submitted along with your quotations.
- f) The Tender must be submitted along with the stipulated EMD fee in the sealed cover, superscribing "**Tender for DST-SERB Project Equipment – Department of Green Energy Technology**". The name and address of the bidder should also be mentioned at the "From address" space.
- g) The Tender should be addressed and posted to the following address by speed, registered post or by courier.

**Dr. A. Sreekumar,  
Assistant Professor and PI – DST-SERB project,  
Centre for Green Energy Technology,  
Pondicherry University (A Central University),  
R.V. Nagar, Kalapet,  
Puducherry – 605 014**

- h) **Tenders will not be accepted through fax / e-mail.**

### II. Common Conditions (Import or Indigenous)

#### 1. **Price Schedule:**

The rates should be quoted for a single unit and also for the total quantity required by the University. The price should include the delivery, installation, training charges, etc. at the respective Department, Pondicherry University. The prices quoted shall remain firm until the equipment is supplied to the respective Department, Pondicherry University.

#### 2. **Quoting the Core price & Tax, Duties, Discount etc:**

The taxes / duties / discounts, if applicable, are to be explicitly and separately shown in the bid.

### 3. *Eligibility:*

The firm must have the requisite domain expertise with regard to supply, installation and post-sales service of the items they are quoting. The firm should have sufficient number of installations of the similar Equipment in the premier Research Institutes in India. Any other techno commercial information, pertaining to this particular Equipment, principal suppliers, technical background and capability, local agents' background on Scientific Equipment Business, etc. may also be appended along with testimonials and documentary proof.

### 4. *Duty Exemption:*

The University has been granted the benefit of exemption from the payment of the Central Excise Duty and Customs Duty by the Department of Scientific and Industrial Research (DSIR), India, vide their Notification No.10/97, dated 01-03-1997 and No.51/96 dated 23.07.96 respectively, in respect of

- a) Scientific and technical instruments, apparatus, equipment, software including computers.
- b) Accessories and spare parts of goods specified in (a) above and consumables.
- c) Computer software, compact disks, CD ROM, recording magnetic tapes, microfilms, micro-chips etc.
- d) Prototypes.

Customs duties at Indian port, if any, will be to the account of the University.

### 5. *Technical Specifications:*

i. **WARRANTY:** The Equipment covered under the purchase order, when installed, shall be warranted for the quality, workmanship, trouble free operation and performance for a period of at least 13 months from the date of putting the system into operation at the Centre for Green Energy Technology, Pondicherry University, or at least 12 months from the date of receipt of the last lot of the consignment in India.

ii. If any item covered under warranty fails, the same shall be replaced free of cost including all the applicable charges including shipping cost both ways.

iii. Complete technical specifications of the Equipment including the operating system to be included in the bid.

iv. The necessary service support should be provided by Bidder during the agreement period.

v. The training should be provided by the supplying companies.

vi. Operating Manual should be provided in English.

vii. A recent customer list (within last five years) with contact details including email address is to be submitted with technical bids / bids as the case may be.

viii. If the Equipment is proprietary a product, a proprietary product certificate should be enclosed.

ix. The Equipment must operate at 230V / 50 Hz single phase and / or equivalent three phase electrical power.

x. **The validity of the each quotation should be at least for THREE MONTHS from closing date.**

xi. The offers will not be considered if received after the bid closing date and time.

xii. The offers received through telex / telefax / e-mail will not be accepted by the University under any circumstances.

xiii. The University shall not be responsible for any delay / loss or non-receipt of the tender by post / courier service.

xiv. No unsolicited correspondence shall be entertained after the submission of the offer.

xv. If an order is placed with the firm, the purchase shall be governed by an agreement as per the University rules in force at the time.

xvi. Additional terms and conditions will be incorporated in the purchase order, if needed, to safeguard the interests of the University.

xvii. The tender is not transferable.

xviii. In case of any dispute in respect of the Tender, all legal matters shall be instituted within the jurisdiction of the place where the purchaser ordinarily resides.

6. ***Power to reject the offer:***

i. Pondicherry University reserves the right to accept / reject any offer in full or in part or accept any offer other than the lowest offer without assigning any reason thereof. Any offer containing incorrect and incomplete information shall be liable for rejection.

ii. No Agency commission will be paid to any authorized agent in India.

iii. Liquidated damages: Timely supply of the ordered items, installation, commissioning (wherever is applicable) and training etc. is the essence of the contract. In case of failure to supply within the time specified in the Purchase order, a penalty / LD of 0.5% of the total value per week or a part thereof shall be levied subject to a maximum of 7.5% in respect of items which are not supplied. The decision of Pondicherry University shall be final in this regard.

iv. Bidder(s) must be authorized business partners of Global / National service providers of the respective Equipment.

v. The Bidders must enclose authorization letter from the respective global / national service providers of the above said Equipment particularly mentioning an undertaking that in case of default by the Bidder, they (Global Service Provider) shall take over all the responsibilities of the Bidder.

vi. The Bidder should not be involved in any Bankruptcy filing for protection from it.

### **III. Specific Conditions for Imported Equipment's**

1. **Payment of EMD:**

The Quotation must be accompanied by EMD as stated above, by means of a Demand Draft, drawn in favour of **The Finance Officer, Pondicherry University, payable at Puducherry.**

The Small Scale units are exempted from payment of EMD provided they enclose the proof of their exemption Certificate issued by the competent authority.

2. **Payments terms:**

Normally a payment 90% will be released after the installation & training. However, 100% payment will be released if the supplier provides Bank Guarantee towards performance Security for the 10 % of the total cost of the equipment to cover the warranty period. Bank charges in India shall be borne by the purchaser and outside India shall be borne by the contractor / supplier. The offer must be in English. The rates should be indicated both in figures and words against item specified in the given table.

## BANK GUARANTEE

Pondicherry University  
Bharat Ratana Dr. B R Ambedkar Administrative Building  
R Venkataraman Nagar  
Puducherry 605 014

This guarantee made this \_\_\_\_\_ day of \_\_\_\_\_ 201\_ by and one of its branches at \_\_\_\_\_ and one of its branches at \_\_\_\_\_ (hereinafter referred to as “the Guarantor” which expression shall, unless it be repugnant to the subject, meaning or context thereof, be deemed to mean and include its successors and assigns) in favour of the Pondicherry University, Puducherry 605 014 represented by its Registrar, having his office at R. Venkataraman Nagar, Kalapet hereinafter referred to as the “University” which expression shall include his successors in office for an amount not exceeding Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) at the request of M/s. \_\_\_\_\_ (more fully described hereunder)

2. Whereas the University has placed Work Order No: PU/ \_\_\_\_\_ dated \_\_\_\_\_ for \_\_\_\_\_ with M/s. \_\_\_\_\_ having its office at \_\_\_\_\_ and hereinafter referred to as the “Contractor” which expression shall include their successors and assigns.

3. And whereas the Contractor has accepted and agreed to execute the work as per the work order as per undertaking / agreement dated \_\_\_\_\_ within the time stipulated and in the manner specified therein.

4. And whereas the University has called upon the Contractor to furnish Bank Guarantee for the sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) for fulfillment of the said work as specified in the work order and as agreed to by the Contractor.

5. And whereas the Contractor has requested the Guarantor herein to furnish an irrevocable and unconditional Bank Guarantee in favour of the University for an amount of Rs. \_\_\_\_\_ as guarantee towards execution of the work as agreed to by the contractor to the University.

6. Now, therefore we \_\_\_\_\_ Bank, the Guarantor herein, do hereby irrevocably and unconditionally Guarantee the payment to the University the sum not exceeding Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) in the event of any breach, failure, neglect of inability on the part of the Contractor in the execution of the said work, on demand without reference of the matter to the Contractor and without any prior consent of the Contractor, at all times throughout the period of execution of the work, demur, cavil or argument or delay.

7. The Guarantor agrees and undertakes that the decision of the University as to whether the contractor has committed any breach of the obligation with respect to the work to be executed, and the quantum of amount therefore payable by the Contractor to the University in that regard, shall be final, binding and conclusive as against the Guarantor and the Guarantor shall make payment accordingly, on demand by the University.

8. The Guarantor further agrees and undertakes to pay to the University the amount demanded by

the University irrespective of and notwithstanding any dispute raised by the Contractor in any suit or proceeding before any judicial forum relating to the Contracted work and the Guarantor's liability under this Guarantee shall be absolute and unequivocal.

9. This Guarantee is issued subject to the condition that the liability of this Guarantor under this guarantee is limited to the maximum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) and the guarantee shall remain in full force up to \_\_\_\_\_ and invoked otherwise than by a written demand or claim by the University for the payment of the said amount by the Guarantor on or before \_\_\_\_\_ or any extended date as decided by the University.

10. This University shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the contracted work or to extend time for performance of the work by the Contractor. Any change to the contracted work shall not in any way release the Bank (Guarantor) from liability under this Guarantee and we waive notice of any such change. The University shall have full liberty to forbear or enforce any of the terms and conditions of the contracted work.

11. This Guarantee shall not be affected by any legal limitation, disability or other circumstances relating to the Contractor or the Guarantor.

12. This Guarantee shall be valid for the period upto \_\_\_\_\_ and shall extend further and beyond \_\_\_\_\_ for such period as determined by the University.

13. The Guarantor undertakes not to revoke this guarantee except with the previous consent of the University in writing.

14. Notwithstanding anything contained herein: Our liability under this guarantee shall be limited to Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only). This guarantee shall be valid upto \_\_\_\_\_ and for such further period as determined by the University for fulfillment of the contract. We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before \_\_\_\_\_ or such extended period / date. In witness whereof, this Guarantee has been executed by \_\_\_\_\_ for an on behalf of the Bank (Guarantor) on the day, month and year first above written.

***SIGNATURE AND SEAL  
NAME OF THE BANK (GUARANTOR)  
ADDRESS***

## Technical Specification of items

### 1. Digital Thermo Anemometer With Data Interface

Item	Specification		Quantity
<b>Digital Thermo Anemometer with Data Interface</b>	Medium Velocity Range Operating Temperature Accuracy Probe Diameter Probe Length Intel core i5 Desktop computer 4 <sup>th</sup> Generation/8 GB DDR3 RAM/500GB HDD/20" LED monitor/Win 8.1/Accessories/UPS	Air 0 to 20 m/s 20 to 70°C ± (0.03 m/s +5%) ±0.5 °C (0 to +60 °C) ±0.7 °C (remaining range) 10 mm or below above 25 cm	1

### 2. Thermal Conductivity Analyser

<b>Thermal Conductivity Analyser</b>	Measuring the thermal conductivity of liquids in a constant temperature. Thermal conductivity range: 0 -10 W/mK. Safety tested high current power supply. Multipurpose data logger.	1
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### 3. Data Logger & RTD Sensor

<b>Data Logger</b>	No of channels: 16 Output: RS232Printer interface needed/direct Excel sheet PT 100 RTD sensor suitable LED Display /Touch screen Pen drive data copy facility needed	1	
<b>RTD Sensor</b>	Temperature range Accuracy Measuring Medium Cable length	0-300°C 0.01 °C Air and liquid 10m per each	20

#### 4. Solar Air Heaters

No.	Items	Specifications		Qty
4.1	<p align="center"><b><u>Type 1</u></b></p> <p align="center"><b>Underflow Solar Air Heater with Cu absorber plate</b></p>	Size Absorber plate Bottom plate Glazing  Insulation (sides and bottom)  Structure and frame materials  Air channel depth *(A selective coated extra Al absorber plate to be provided)	2 m x 1 m Black chrome coated Cu plate Aluminium (22 SWG) 4mm toughened solar glass (with provision for opening the lid for changing the absorber plate) 50mm Rockwool/PUF  Al extrusions and Al sheet  120 mm	1
4.2	<p align="center"><b><u>Type 2</u></b></p> <p align="center"><b>Double flow Solar air heater with Cu absorber plate</b></p>	Size Absorber plate Bottom plate Glazing  Insulation (sides and bottom)  Structure and frame materials Air channel depth *(A selective coated extra Al absorber plate to be provided)	2 m x 1 m Black chrome coated Cu plate Aluminium (22 SWG) 4mm toughened solar glass (with provision for opening the lid for changing the absorber plate) 50mm Rockwool/PUF  Al. extrusions and Al sheet 120 mm (60 mm above and 60 mm below)	1
4.3	<p align="center"><b><u>Type 3</u></b></p> <p align="center"><b>Corrugated underflow Solar air heater</b></p>	Size Air flow Absorber plate  Bottom plate Glazing  Insulation (sides and bottom) Structure and frame materials  Air channel depth  *(A selective coated extra Al absorber plate with horizontal corrugation to be provided )	2 m x 1 m Crossed Selective coated corrugated Al sheet Aluminium (22 SWG) 4mm toughened solar glass (with provision for opening the lid for changing the absorber plate)  50mm Rockwool/PUF Al. extrusions and Al sheet  120 mm (60 mm above and 60 mm below)	1



No.	Items	Specifications		Qty
4.4	<b>Type 4</b>  <b>Solar matrix air heater with Cu wire mesh</b>	Size Absorber plate  Mesh size & no. of layers Bottom plate Glazing  Insulation (sides and bottom)  Structure and frame materials  Air channel depth	2 m x 1 m Selective coated Cu Wire mesh bed 75 & 6 layers Aluminium (22 SWG) 4mm toughened solar glass (with provision for opening the lid for changing the absorber plate) 50mm Rockwool/PUF  Al. extrusions and Al sheet  120 mm	1
4.5	<b>Type 5</b>  <b>Solar matrix air heater with Al wire mesh</b>	Size Absorber plate  Mesh size & no. of layers Bottom plate Glazing  Insulation (sides and bottom)  Structure and frame materials Air channel depth	2 m x 1 m Selective coated Al Wire mesh bed 75 & 6 layers Aluminium (22 SWG) 4mm toughened solar glass (with provision for opening the lid for changing the absorber plate) 50mm Rockwool/PUF  Al. extrusions and Al sheet 120 mm	1

### **5. PCM integrated Solar Air Cum Water Heater**

Item	Specification		Quantity
<b>PCM integrated Solar Air Cum Water Heater</b>	Size Glazing  Absorber sheet  Header  Risers  No. of risers & pitch	2 m x 1 m 4mm toughened solar glass (with provision for opening the lid for changing the absorber plate) Selective coated copper sheet with header, riser and PCM tube welded to it. Copper tube with diameter of 25mm and thickness 0.70mm Copper tube with diameter 12.5mm and thickness 0.50mm. 10 & 100 mm	1

	<b><u>PCM tubes</u></b> Material Diameter Thickness. Pitch Insulation (sides and bottom) Structure and frame materials Insulated storage tank  Cold water overhead tank Other features	Copper 50mm 1mm 100mm 50mm Rockwool/PUF Al. extrusions and Al sheet 100 litre capacity with ducting and cladding SS and 50 mm PUF 250 litre capacity Provision for air and water inlet and outlet	
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### **6. PCM integrated solar cabinet drier cum water heater**

<b>Item</b>	<b>Specification</b>		<b>Quantity</b>
<b>PCM integrated solar cabinet drier cum water heater</b>	Size Type Absorber plate	2.5 m x 0.9 m Direct Selective coated SS sheet (rectangular box with PCM inside and 6mm tubes inserted at a pitch of 100mm)	1
	Water tubes Glazing	8 mm SS tubes welded on the absorber plate 4mm toughened solar glass	
	<b><u>Trays</u></b> Material No. of trays Size Insulation (sides and bottom) Structure and frame materials Loading and unloading Airflow Control mechanism	SS 4 400 mm x 300 mm 50mm Rockwool/PUF Al extrusions and Al sheet Door at one side PV operated fans Actuator based temperature controller inside the chamber (optional)	