



**INDIAN INSTITUTE OF TECHNOLOGY  
KHARAGPUR-721 302, INDIA**

Tender No. **IIT/AGFE/EQUIP/Tender/LWRE/DRM/2/2018-19**

**Dated: 31.12.2018**

**INVITATION FOR TENDER FOR SUPPLY OF EQUIPMENT**

Sealed tender offers are invited in two separate sealed covers (Technical and Commercial offers) from eligible Indian manufacturers/suppliers or foreign manufacturers through their direct Indian agents for the supply of the equipment.

Interested vendors, who have adequate credential for supply of these items, are requested to send their sealed bids under a **Two-Bid System** of the **Equipment** with their **Detailed Technical Specifications** given at **Annexure-I** and General Terms & Conditions given at **Annexure-II**. In addition, the vendor must submit a signed “declaration” form as given in **Annexure-III**.

The Tender be sent in a sealed packet, containing two separate sealed envelopes for each of the items mentioned in **Annexure-I** (one for Technical Bid and the other for Commercial Bid, **Format for Commercial Bid in Annexure-IV**). Each envelop should be duly superscripted with (i) the Tender Notice No. given in the table below (ii) content of the envelope(i.e. Technical Bid / Commercial Bid) and (iii) the ‘description of the stores’ as given in **Annexure-I** to:

**Prof. D.R. Mailapalli**  
**Agricultural and Food Engineering Department**  
**Indian Institute of Technology Kharagpur,**  
**Kharagpur-721 302, West Bengal**

Tenders should reach the addressee not later than the “Last date and Time “mentioned in the Table below. Tender Notice No.	<b>IIT/AGFE/EQUIP/Tender/LWRE/DRM/2/2018-19</b>
Last date and Time of receipt of Tender	21 January, 2019 at 4:30 PM
Time and date of Opening of bids	21 January, 2019 at 4:30 PM
Place of Opening of Tender	Agricultural and Food Engineering Department, IIT Kharagpur, Kharagpur- 721302, West Bengal
Address of communication	As stated above
Contact Telephone No.	03222 283102

The Technical bids will be opened in the presence of the vendors/their authorized representatives and will be evaluated first. Price bids will be opened (to be notified separately), only of those firms, who will be found technically qualified/short listed, after evaluation of their technical bids. The Institute reserves the right to accept or reject the bids/tender or take any decision as deemed fit as per rules.

Prof. Nirupama Mallick  
Head of the Department  
Agricultural & Food Engineering Department

- Copy to:** 1. PIC, IIC with a request to upload the tender document in the Institute website  
2. CPP Portal  
3. Notice Board

**Annexure -I**

Item No.	Item	Quantity	Technical Specifications
<b>1</b>	<b>Hydrological Data Acquisition System</b>	<b>01</b>	
1A	Automatic Weather Station	01	<p><b>Rain Gauge :</b> Tipping bucket, Temperature range 0° to 50°C, Resolution 1 tip, Rainfall per tip- 0.01", Orifice Diameter- 6.06", Accuracy upto 1"/hr-±1%, 1 to 2"/hr – 0to3%, 2to 3"/hr – 0 to 5%.</p> <p><b>Solar Radiation:</b> Waveband 310-2800nm, Maximum Irradiance – 2000W/m<sup>2</sup> Sensitivity – 5 to 20μV/W/m<sup>2</sup>, Operating Range: -40° +80°C, Temperature dependence:± 5%, Non linearity: &lt; ± 2.5%, Tilt Response:&lt;±2% at 1000W/m<sup>2</sup>,ISO Classification: Second Class.</p> <p><b>Wind Speed:</b> Range: 0-50m/s, Accuracy: 0.5m/s upto5m/s &amp; 3% above 5m/s</p> <p><b>Wind Direction:</b> Range: 0 to 360 degree, Accuracy: ± 3°, Threshold: Vane: 0.8m/s, Operating Range: -20° to 80°C;</p> <p><b>Minimum and Maximum Temperature:</b> Type Sensirion SHT75 or PT100 or Thermistor, Range: -40°to +70° or better, Accuracy: 0.9°C</p> <p><b>Relative Humidity:</b> Sensor: Sensirion SHT75 or thin film capacitor, Range: 0 to 100% RH, Accuracy @25°C:2%, Temperature accuracy: ±0.9%</p> <p><b>Air Pressure Sensor:</b> Pressure Range: 600- 1100mb, Operating Temperature: -40°C to +60°C Accuracy: at 20°C ± 0.5mb</p> <p>Capable of data retrieval through datalogger mentioned in Item 9.</p>
1B	Water Flow Sensor	01	Should be able to measure the volumetric water flow at the inlet to an area, and also at branches within the area covered. The sensor should be capable of sending the data periodically to an aggregation server of choice. Should be capable of communicating with the aggregation server using wireless communication technology. Accuracy should be + or - 1% or better..
1C	Water level sensor	08	The sensor should be capable of measuring the water level from a reference point. The sensor would be capable of sensing the level periodically or at preselected time and sending the data to the aggregators of choice (Local or Cloud). Should have wireless communication capability, compatible with the aggregators. Accuracy + or - 5% or better.
1D	Rain gauge	08	The rain gauge should be capable to measuring rain with a range of upto 50cm/hr. The measurement should be reported to the aggregation server periodically or at pre-selected times. Should be capable of emptying the collector when it reaches maximum level, and also be controllable, i.e. empty on command from remote controller. Accuracy + or - 4% or better.
1E	Evaporimeter	08	The meter should be measuring and send the data either periodically or at pre-set times to the aggregator server using wireless communication. Should be capable of compensating for any precipitation. Accuracy of + or - 2% or better.

1F	Flume/Runoff Flow Sensor	10	Should be able to measure the volumetric water flow in a flume and report periodic or at pre-set times to the data aggregator server using wireless communication. Accuracy of +/- 5% or better.
1G	Soil sensors	24	The soil probe would be capable of measuring moisture, temperature, and salinity and report the data to the aggregator using wireless communication. Also required to measure the parameters at different depths, up to a maximum of 120cms. The probe should be capable of having multiple sensors at different depths so that data can be collected at different depths. Accuracy + or - 3% or better.
1H	Data storage unit	08	The data storage should be capable of storing data from all the above sensors and probes for a period of 90 days. Able to retrieval through USB and onboard display.
1I	Power	-	Sensors, probes and loggers should support battery power, with local charging using alternate energy, such as solar and AC. Input power 12- 20 V. Capacity to power all equipment associated with each set. The battery must be sized according to the needs of the equipment and ensure least 15 days of full operation without recharge.
1J	Environment Protection	-	The sensor should be capable of operating in harsh weather condition. They should be compliant with standards such as IP65 and IP67. NEMA compliant enclosures should be used.
<b>2</b>	<b>Communication System</b>	-	
2A	Local Aggregation Node	-	The node should be common across all the sensors, probes and data logger of Item 1. Supports the communication interfaces and protocols as required by the sensors and data logger. It should also have the capability to send the data to a remote server using LAN or WAN communication technologies, including cellular where appropriate.
2B	Public/Private Aggregation Node	01	This server should be capable of receiving data from large number of sensors/probes and loggers. Should also provide remote access for visualization of the data. Should support database redundancy, automatically handle changes in the load.
2C	Network Capability	-	The sensors, probes and loggers should be capable of communicating with the aggregator using wireless technology. Support for cellular communication to the server with minimal changes is strongly recommended.
2D	Communication	-	Wireless communication to the local aggregator is a must. Should be secure, and have the ability to change security parameters remotely. Support for cellular communication with minimal changes is strongly recommended.
2E	Power	-	Sensors and probes should support battery power, with local charging using alternate energy, such as solar. Input power 12- 20 V. Capacity to power all equipment associated with each set. The battery must be sized according to the needs of the equipment and ensure least 15 days of full operation without recharge.
2F	Compatibility	-	Compatibility with existing communication technology, is strongly desired.
2G	Environment Protection	-	The sensor should be capable of operating in harsh weather condition. They should be compliant with standards such as IP65 and IP67. NEMA compliant enclosures should be used.
2H	SW Updated	-	Over the Air (OTA) free software updates should be supported for the sensors, probes, and local aggregators.

## GENERAL TERMS & CONDITIONS

PLEASE SPECIFICALLY INDICATE THE FOLLOWING POINTS IN YOUR QUOTATIONS AND COMPLY THE TERMS AS MENTIONED HEREUNDER:-

1. TENDERS ARE INVITED COMPLYING THE REQUIREMENT FOR TENDER AS DETAILED IN THE TENDER SPECIFICATION TO BE SUBMITTED IN THE COMPANY'S / FIRM'S LETTERHEAD NEATLY PRINTED / TYPED DULY SIGNED BY AUTHORIZED PERSON WITH THE SEAL OF THE BIDDERS. ALL ENVELOPES CONTAINING THE TENDER SHOULD BE PROPERLY SEALED. SEPARATE ENVELOPES SHOULD BE USED FOR TECHNICAL AND PRICE BID AND INDICATION TO THEIR EFFECT MAY PLEASE BE SUPERSCRIBED ON THE ENVELOP.

### **THE FOLLOWING DOCUMENTS ARE REQUIRED FROM THE INDIAN AGENTS OF FOREIGN FIRMS:**

FOREIGN PRINCIPAL'S PROFORMA INVOICE INDICATING THE COMMISSION PAYABLE TO THE INDIAN AGENT AND NATURE OF AFTER SALES SERVICE TO BE RENDERED BY THE INDIAN AGENT.

COPY OF THE AGENCY AGREEMENT WITH THE FOREIGN PRINCIPAL INDICATING THE NATURE OF AFTER SALES SERVICES, PRECISE RELATIONSHIP BETWEEN THEM AND THEIR MUTUAL INTEREST IN THE BUSINESS.

2. TECHNICAL CATALOGUE/LEAFLET SHOULD BE ENCLOSED WITHOUT FAIL. PROVIDE COMPLIANCE STATEMENT WITH RESPECT TO THE TECHNICAL SPECIFICATIONS MENTIONED ABOVE.
3. PLEASE CONFIRM WHETHER YOU ARE AUTHORISED TO QUOTE ON BEHALF OF YOUR PRINCIPALS AND IF SO, PLEASE ENCLOSE A COPY OF SUCH AUTHORISATION WITH YOUR QUOTATION.
4. **PRICE BIDS FOR FOREIGN FIRMS:** PRICES ARE TO BE QUOTED ON 'EX-WORKS' DULY PACKED OR ON "FCA/FOB" INTERNATIONAL PORT" BASIS AND ALSO INCLUDING AGENCY COMMISSION PAYABLE TO YOUR INDIAN AGENTS, IF ANY SHOWING CLEARLY THE FOLLOWING BREAK UP:-

I) EX-WORKS PRICE

II) PACKING & FORWARDING

III) FREIGHT

IV) ANY OTHER RELEVANT EXPENSES.

V) TAXES PAYABLE BY THE INSTITUTE

INSURANCE WILL BE PAID BY OUR INSTITUTE SEPARATELY AND SHOULD NOT FORM PART OF THE QUOTED PRICE.

**PRICE BIDS FOR INDIAN FIRMS:** PRICES ARE TO BE QUOTED ON F.O.R., IIT KHARAGPUR, ON DOOR DELIVERY BASIS CLEARLY SHOWING THE BREAK UP.

5. **PERIOD OF VALIDITY:** BIDS SHALL REMAIN VALID FOR ACCEPTANCE FOR A PERIOD OF 120 DAYS FROM THE DATE OF OPENING.
6. INDIAN AGENTS ADDRESS AND PERCENTAGE OF AGENCY COMMISSION INCLUDED IN ABOVE \F.O.B./EX-WORKS PRICE. (THIS WILL BE PAID TO THE INDIAN AGENTS IN INDIAN RUPEES ONLY AND NOT IN FE). PLEASE ENCLOSE COPY OF AGENCY AGREEMENT ENTERED INTO WITH YOUR PRINCIPALS INDICATING THE NATURE OF AFTER SALES SERVICES OF INDIAN AGENTS, PRECISE RELATIONSHIP & MUTUAL INTEREST IN THE BUSINESS.
7. **MEASUREMENTS/WEIGHT:** NETT/GROSS OF THE CONSIGNMENT. IN CASE OF AN ORDER, YOU SHALL USE AIR WORTHY PACKAGE (AS APPLICABLE) DULY CERTIFIED WITH DOCUMENTS–PLY TO– SANITARY CERTIFICATE (AS PER QUARANTINE ORDER 2003).
8. **SCOPE OF SUPPLY:** SHOULD INCLUDE FREE INSTALLATION AND COMMISSIONING
9. **PAYMENT TERMS FOR FOREIGN FIRMS**

**The offer will be made on a single currency and only one PO will be issued for the entire scope of the supply.**

- A). 90% PAYMENT THROUGH SIGHT DRAFT/FORIGN DEMAND DRAFT/LC (EXCEPTIONAL CASES)/SWIFT TELE TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER AND CONDITION AND 10% AFTER SUCCESSFUL INSTALLATION & COMMISSIONING.
- B). BANK CHARGES ON LC/SD (WITHIN INDIA APPLICANT ACCOUNT AND OUTSIDE INDIA TO BENEFICIARY ACCOUNT).

#### **PAYMENT TERMS FOR INDIAN FIRMS**

- A) 100% PAYMENT THROUGH CROSSED ACCOUNT PAYEE CHEQUE / ELECTRONIC TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER & CONDITION AND SUCCESSFUL INSTALLATION & COMMISSIONING.
- B) ENSURE MENTIONING
  - i) BANK DETAILS OF THE BENEFICIARY, GSTNO. AND PAN NUMBER

ii) FULL NAME AND ADDRESS OF THE BENEFICIARY ON WHOM ORDER HAS TO BE PLACED

10. WHETHER ANY EXPORT LICENCE IS REQUIRED FROM YOUR GOVERNMENT, IF SO, PLEASE CONFIRM WITH DETAILS.

11. COUNTRY OF ORIGIN OF THE GOODS IS TO BE MENTIONED.

12. THE INSTITUTE SHALL PROVIDE THE CONCESSIONAL CUSTOMS DUTY AND EXCISE DUTY EXEMPTION CERTIFICATE AS PER GOVT. NOTIFICATION NO. 51/96 CUSTOMS DATED: 23.07.1996 AND CENTRAL EXCISE DUTY EXEMPTION IN TERMS OF GOVT. NOTIFICATION NO. 10/97 – CENTRAL EXCISE DATED: 01.03.1997 AS AMENDED FROM TIME TO TIME.

13. **LIQUIDATED DAMAGES:** THE STORES SHOULD BE DELIVERED / DISPATCHED TO DESTINATION AND READY FOR OPERATION NOT LATER THAN THE DELIVERY DATE SPECIFIED. IF THE SUPPLIER FAILS TO DELIVER ANY OR ALL THE STORES OR PERFORM THE SERVICE BY THE SPECIFIED DATE, LIQUIDATED DAMAGES AT 1% PER MONTH OR PART THEREOF IN RESPECT OF THE VALUE OF STORES WILL BE DEDUCTED FROM THE CONTRACT PRICE SUBJECT TO A MAXIMUM OF 5%. ALTERNATIVELY, THE ORDER WILL BE CANCELLED AND THE UNDELIVERED STORES PURCHASED FROM ELSEWHERE AT THE RISK AND EXPENSE OF SUPPLIER.

14. **PATENT RIGHTS:** THE SUPPLIER SHALL INDEMNIFY THE PURCHASER AGAINST ALL THIRD PARTY CLAIMS OF INFRINGEMENT OF PATENT, TRADEMARK OR INDUSTRIAL DESIGN RIGHTS ARISING FROM USE OF THE GOODS OR ANY PART THEREOF IN INDIA.

15. ONLY THOSE BIDDERS WHO'S BIDS HAVE BEEN TECHNICALLY FOUND ACCEPTABLE WILL ONLY BE INVITED FOR PARTICIPATION IN THE PRICE BID.

16. THOSE BIDDERS WHO DO NOT RECEIVE ANY COMMUNICATION FOR PARTICIPATION IN PRICE BID OPENING MEETING MAY PRESUME THAT THEIR BID HAS NOT BEEN ACCEPTED BY THE INSTITUTE.

17. CONDITIONAL OFFER WILL NOT BE ACCEPTED.

18. LATE TENDERS I.E. TENDER RECEIVED AFTER THE DUE DATE AND TIME OF SUBMISSION AS MENTIONED ABOVE SHALL NOT BE ACCEPTED.

19. BIDDERS TO ENCLOSE THE FOLLOWING DOCUMENTS:-

A). INCOME TAX RETURN (3 YRS) AND LATEST SALES TAX RETURN (GST No.), AND PAN NO.

B). BANKER'S SOLVENCY CERTIFICATE

C). SUMMARY OF AUDITED STATEMENT OF ACCOUNTS FOR THE LAST THREE YEARS TO BE ENCLOSED AND FINANCIAL HIGHLIGHTS AND THE KEY PERFORMANCE DURING THE LAST THREE QUARTERS TO BE ENCLOSED AS PER FORMAT:-

COMPANY'S KEY PERFORMANCE

DESCRIPTION	JAN. TO MARCH	APRIL TO JUNE	JULY TO SEPT.
GROSS REVENUE			
PROFIT BEFORE TAX			
PROFIT AFTER TAX			
RETURN ON INVESTED			
CAPITAL (ROIC)			

D) CUSTOMER SATISFACTION CERTIFICATE FROM TWO SUCH ORGANIZATION IS TO BE ATTACHED WITH THE TECHNICAL BID AND PRICE BID.

E) NAME AND ADDRESS OF MINIMUM THREE CLIENTS TO WHOM SUCHEQUIPMENT HAVE BEEN SUPPLIED SHOULD BE MENTIONED.

20. **WARRANTY / GUARANTEE:** THIS COMPREHENSIVE WARRANTY / GUARANTEE SHALL REMAIN VALID FOR **2 YEARS** AFTER THE GOODS (OR ANY PORTION THEREOF AS THE CASE MAY BE) HAVE BEEN DELIVERED AND COMMISSIONED TO THE FINAL DESTINATION.

21. THE INSTITUTE DOES NOT BIND ITSELF TO OFFER ANY EXPLANATION TO THOSE BIDDERS WHO'S TECHNICAL BID HAS NOT BEEN FOUND ACCEPTABLE BY THE EVALUATION COMMITTEE OF THE INSTITUTE. ALL TENDERS (UNLESS OTHERWISE SPECIFIED) ARE TO BE SUBMITTED / HANDED OVER TO Prof. D.R. Mailapalli, Professor, Agricultural and Food Engineering Department, INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR - 721302 AND ACKNOWLEDGEMENT TO BE OBTAINED.

**IMPORTANT**

1. IIT Kharagpur authority may accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. The Institute at its discretion may change the quantity / upgrade the criteria / drop any item or part thereof at any time before placing the Purchase Order.
2. Promptly make arrangements for repair and / or replacement of any damaged item (s) irrespective of settlement of claim.

3. In case of any dispute, the decision of the Institute authority shall be final and binding on the bidders.

For any query pertaining to this bid document correspondence may be addressed to Prof. D.R.Mailapalli, at the address mentioned above.

**LAST DATE FOR SUBMISSION OF SEALED BIDS: 21 January 2019, 4:30 PM**

- 1) Please Note that the Institute remains closed during Saturdays & Sundays and all specified government holidays.
  - 2) Fax, e-mail Tender will not be accepted.
  - 3) The General Terms and Conditions as stated above relate to supply of stores / equipment /assets etc. and for specific service other terms and conditions of the Institute will apply.
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Prof Nirupama Mallick  
Head of the Department  
Agricultural and Food Engineering Department  
IIT Kharagpur



**DECLARATION**

1. I, -----Son/Daughter of Shri -----  
----- Proprietor/Partner/CEO/MD/Director/Authorized Signatory of  
M/s. ----- am Competent to sign this declaration and  
execute this tender document.

1.I have carefully read and understood all the terms and conditions of the tender and here by convey my acceptance of the same.

2. The information/documents furnished along with the above application are true and authentic to the best of my knowledge and belief.
3. I/ we/ am are well aware of the fact that furnishing of any false information/fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.
4. Each page of the tender document and papers submitted by my Company is authenticated, sealed and signed, and I take full responsibility for the entire documents submitted.

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Signature of the Authorized Person

Date: -----

Place: -----

Full Name: -----

Company Seal: -----

**Price Bid Format**

1. Name of the Vendor
2. Address:
3. Name of the Authorized person  
with Mobile Number & Email

Sl.No.	Description of the Equipment.	Price in INR/ Price in Foreign Currency*	Taxes if any	FOB/FCA/FOR at IIT KGP	Total
01	ex: Resistivity Meter				
02					
Total in words:					

\*Currency conversion factor will be taken that of the prevailing rate on the day of opening of the Price bid.

Signature of the Authorized person  
with date and seal