




 भा. कृ. अनु. प. – केन्द्रीय शुष्क क्षेत्र अनुसंधान संस्थान
 ICAR - Central Arid Zone Research Institute
 जोधपुर (राजस्थान) 342 003 / Jodhpur (Rajasthan) 342 003
 Website: www.cazri.res.in, Email: aaostoreadmiv@gmail.com
 Phone No. 0291 –2787152(AAO) Phone No. 0291-.2786485 (CAO)/ FAX: 0291 – 2788706



F. No. 55(4)2021-2022/Adm. IV/

Dated: 28.01.2022

NOTICE INVITING TENDER THROUGH E-PROCUREMENT

The Director, ICAR-Central Arid Zone Research Institute, Jodhpur on behalf of the President, Indian Council of Agricultural Research, New Delhi invites online bids under Two bid system from the Manufacturer/ authorised dealers/registered firms for the Purchase of Temperature Gradient Tunnel at ICAR-CAZRI, Jodhpur.

Critical Date Sheet

1.	Date and Time for Issue/Publishing	06.00 PM on 28.01.2022
2.	Document Download / Sale Start Date and Time	06.00 PM on 28.01.2022
3..	Document Download / Sale End Date and Time	02.00 PM on 08.02.2022
4.	Bid Submission start Date and Time	06.00 PM on 28.01.2022
5.	Bid Submission End Date and Time	02.30 PM on 08.02.2022
6.	Date and Time for Opening of technical Bids	02.30 PM on 09.02.2022
7.	Date and Time for opening of Financial Bid	After finalize the Technical Bid
8.	Address for Communication	Director, ICAR-CAZRI, Jodhpur-342003 (Raj.) India
9.	Tender Fee Bid Security (Earnest Money)	Tender Fee Rs. 500/- Bid Security Rs. 60000/- in the form of Demand Draft/Bankers cheque/Pay order to be drawn in favour of “ICAR Unit-CAZRI, Jodhpur”, payable at Jodhpur

Note : The tender form and other details are available on CAZRI's website www.cazri.res.in & CPPP. The interested Manufacturers/authorized dealer/Agency/firm of repute may download the tender document from above websites and upload the same after completing in all respect in the e-procure.gov.in portal as per guidelines mentioned in the portal by or before the due date & time.

Encl. : Annexure- I to IX (for technical Bid Cover (Cover-I) &
Annexure- X (for Financial Bid Cover (Cover-II)

**Asstt. Administrative Officer (S)
for Director**

F.No. 55(4)2021-2022/Admn.IV

Instructions for Online Bid submission

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: <https://eprocure.gov.in/eprocure/app>.

REGISTRATION

- 1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link “**Online bidder Enrolment**” on the CPP Portal which is free of charge.
- 2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- 3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- 4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.), with their profile.
- 5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC’s to others which may lead to misuse.
- 6) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

PREPARATION OF BIDS

- 1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- 2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- 3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
- 4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Space” or “Other Important Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

- 1) Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 3) Bidder has to select the payment option as “offline” to pay the tender fee / EMD as applicable and enter details of the instrument.

- 4) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- 5) Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.
- 6) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 7) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 8) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 9) Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 10) The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

ASSISTANCE TO BIDDERS

- 1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- 2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

Technical Bid**Terms and Conditions**

1. The tenderer shall quote rates, which will include the delivery (supply and installations) & other incidental charges. Taxes, if any, should be indicated separately.
2. The rates should be quoted as per the Financial Bid /BOQ format uploaded on the CPP Portal. Taxes if any, should be indicated separately. It must be noted that the contract shall be awarded to the firm which fulfils all the required specifications, terms and conditions and remains L-1.
3. The firm must also possess valid PAN No., TIN No. & GST registration number and a copy of the same must also be enclosed with the tender document.
4. Copy of Income Tax Return of last 2 years may be furnished.
5. Modification in the tender documents after the closing date and time is not permissible.
6. The successful firm shall have to supply the **item (from the date of confirmed supply order) within 45 days /as mentioned in the supply order(P.O.)** and if the materials are not supplied and installed in time then EMD shall be forfeited. The rates quoted shall be valid for 6 months from the date of opening of tender.
7. The contractor/bidder or his representative may contact the undersigned at Tel No.0291-2787152 for any further clarification. No variation in terms of quality of the items shall be entertained or else EMD/Security deposit shall be forfeited.
8. The Director, ICAR-CAZRI, Jodhpur shall have the right to reject all or any of the offers, accept more than one offer, and assign part of the job.
9. Merely quoting of lowest rates does not mean that order shall be given to that firm. The competent authority will finally decide on the basis of quality & performance of past installations.
10. The interested Firms are required to deposit/submit (in original) Tender fee (not refundable) and an Earnest Money Deposit (EMD) of the amount mentioned in Critical date sheet in the form of Demand Draft/Bankers cheque/Pay order from any of the Commercial Bank in favour of "ICAR Unit-CAZRI, Jodhpur", payable at Jodhpur may be addressed to Director, ICAR-CAZRI, Jodhpur on or before bid submission closing date and time as mentioned in critical date sheet. No quotation/tender shall be considered without the earnest money deposit. Demand Draft drawn in favour of any officer other than "ICAR Unit-CAZRI, Jodhpur" payable at Jodhpur will not be accepted and the tender will be rejected. The earnest money will be refunded only after the finalization of the procurement and no interest will be paid on earnest money.
11. Rates once finalized will not be enhanced/reduced during the currency of the contract. In case of foreign currency, conversion rates in INR will be taken on that day when financial bid open.
12. In case, the successful bidder shows inability at any stage, after the contract is finalized and awarded, for whatsoever reason(s), to honour the contract, the earnest money / performance security deposited would be forfeited.
13. The Director, ICAR-CAZRI, Jodhpur reserves the right to cancel the contract at any time during the currency period of the contract without giving any reason.
14. The firm to whom the tender will be awarded, will have to deposit the performance security equal to 5% 10% of the total amount at the time of installation of the equipment. If the services are not found to be satisfactory, the performance security is liable to be forfeited. No interest will be paid on performance security.
15. If any dispute(s) arises between ICAR-CAZRI, Jodhpur and the firm with reference to the contract, ICAR-CAZRI, Jodhpur will decide it and its decision will be binding on the firms.
16. **Bid Validity** : 90 days.
17. The contract will be given to Least one (L1).
18. The Institute is exempted from payment of excise duty if any. Hence, excise duty will not be paid to the firm.
19. **Payment**- 100% of the contract price on receipt of goods as per specifications by the consignee supported by satisfactory installation/Demonstration and working report.
20. **Installation** :- **Should be done within stipulated delivery period as per the order at the location as mentioned in the tender in consultation with the indenting officer**, failing which Liquidated Damage clause shall apply. Liquidated Damage clause: It would be realized @ 0.5% (half per cent) of the base price (excluding taxes) of the delayed goods for each week of delay subject to maximum 10%.
21. **Price** -
 - i) The price quoted shall be on firm and fixed basis and should be reasonable living no scope for any further negotiation on price.
 - ii) For goods manufactured in India/abroad : The price of the goods should be quoted on FOR basis and in INR (including all kind of charges and taxes) installations commissioning charges, if any.
22. **Jurisdiction of Court** :- The court of the Jodhpur shall have a jurisdiction to decide any dispute arising out of or in respect of contract.
23. **Force Majeure Clause** :- The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure. For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods. Epidemics, quarantine restrictions, strikes, lockout or any act of war. Notice of the

Tender ID : 2022_DARE_670654_1

happening of any such event is given by either party to the other within 15 days from the date of occurring thereof. However either party at its discretion can terminate the contract in such cases.

24. **Termination of Contract** :- Time shall be the essence of the contract. The purchaser shall have the right to terminate the contract without any notice in part or in full in any of the following cases:
- a) The delivery of the material is delayed for causes not attributed to Force Majeure after the scheduled date of delivery.
 - b) The seller is declared bankrupt or becomes insolvent.
 - c) The delivery material is delayed due to causes of Force Majeure by more than reasonable time.
 - d) In case Performance Security is not furnished within the time period specified by the purchaser.
 - e) Supply in the case of successful Tenderer should strictly confirm to the specifications of the equipment being purchased.
 - f) Any change in Address/Telephone/Fax/e-mail of the tenderer should immediately be informed. The state of non-communication by the firm will make the offer liable for rejection.
25. **Acceptance or rejection of offer** :- The Director, ICAR-CAZRI, Jodhpur reserves the right to accept or reject any tender in part or full without assigning any reason thereof. The successful bidder should submit order acceptance letter within 10 days from the date of issue.
26. On Site warranty and rates for CMC and AMC may be asked to quote as an optional.

'Terms & Conditions are acceptable to us'.

Dated: (Authorized signatory of the firm)

Technical Bid

Check list of documents to be uploaded by the tenderer in Technical bid cover

The Firms are required to upload copies of the following documents:-

S.No.	Documents required	Attached with Technical bid	
		X	Not attached with Technical bid
a)	Scanned copy of Bid Security (EMD) and tender fee/its exemption, if any.		
b)	Scanned copy of Firm's registration issued by the Central Govt./State Govt.		
c)	Scanned copy of TIN No. & GST Registration No.		
d)	RTGS detail of the firm		
e)	Scanned copy of Valid PAN issued by Income Tax Department		
f)	Scanned copy of Income Tax Return of last 2 years		
g)	Scanned copy of signed our terms and conditions		
h)	Tender acceptance letter		
i)	Scanned copy of signed Price Bid undertaking		
j)	Undertaking that firm has not black listed by any government organisation		
k)	Undertaking that items shall be supplied as detailed in tender document		
l)	Scanned copy of ink signed tender specific authorization from OEM (Original Equipment manufacturer).		
m)	User list, and Scanned copies of the Work Orders awarded to firm by the other Govt. dept./organizations etc. for the said item(s) of last 2 years.		
n)	Any other, if any		

Signature of the Tenderer with seal

Technical Bid
Details of the Firm

Name of the firm :

Registered/Postal Address :

.....
.....

S.No.	Particulars	
1.	Phone number/Mobile number	
2.	E-mail Address	
3.	PAN No	
4.	GST / TIN / GST Reg. No.	
5.	Applicable Bank Details : Bank Name : Branch Address with Phone No. Account No. Type of Account (Current/Saving)	
6.	RTGS/IFSC Code & Branch	

Signature of the bidder

Technical Bid
TENDER ACCEPTANCE LETTER
(To be given on Company Letter head)

Date:

To

Sub : Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____

Name of Tender / Work: -

Dear Sir,

1. I / We have downloaded / obtained the tender document(s) for the above mentioned Tender/Work' from the web site(s) namely:

_____ as per your advertisement, given in the above mentioned website(s).

2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc .,), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/ organisation to have also been taken into consideration, while submitting this acceptance letter.

4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.

5. I / We do hereby declare that our Firm has not been blacklisted/ debarred by any Govt. Department/Public sector undertaking.

6. I / We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organisation shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract , without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

Technical Bid

PRICE BID UNDERTAKING

From: (Full name and address of the Bidder) _____

To

Dear Sir/Madam,

I submit the Price Bid for _____ and related activities as envisaged in the Bid document.

2. I have thoroughly examined and understood all the terms and conditions as contained in the Bid document, and agree to abide by them.
3. I offer to work at the rates as indicated in the price Bid, inclusive of all applicable taxes except Service Tax/GST.

Yours Faithfully,

Signature of the firm with seal

Technical Bid

MANUFACTURER'S (OEM) AUTHORISATION FORM

To

The Director,
ICAR- Central Arid Zone Research Institute,
Jodhpur, Rajasthan 342003

Ref : Your Bidding Documents No.....dated.....

Dear Sir,

We....., who are established and reputable manufacturers of (Name and description of the goods offered in the bid) having factories at..... hereby authorize Messrs..... (name and address of the agent) to submit a bid, negotiate (as and if necessary) and conclude the contract with you against your above mentioned Bidding Documents for the above goods manufactured by us.

No company or firm or individual other than Messrs (name and address of the above agent) is authorized to bid, negotiate and conclude the contract against this specific Bidding Documents for the above mentioned goods manufactured by us.

We hereby extend our full guarantee and warranty as per the General Conditions of Contract, read with modification, if any in the Special Conditions of contract for the goods and services offered for supply against this Bidding Document by the above firm.

Yours faithfully,

(Signature name and designation)

for and behalf of Messrs.....

[name & address of the manufacturers]

Note: *This letter of authorization should be on the letter head of the manufacturing firm and should be signed by a person competent and having the power of attorney to legally bind the manufacturer. The authorization Certificate should be from the "Manufacturer" only and certificate from any other firm/person including OEM arrangements would not be accepted*

Technical Bid

(Printed on letter head of firm)

TO WHOM IT MAY CONCERN

We hereby certify that our firm M/s
..... has not been black listed by any
Government, or semi Government department in India.

(Signature of the Firm with Seal)

F.No. 55(4)2021-2022/Admn.IVTECHNICAL BIDSchedule to tender**TECHNICAL SPECIFICATION OF Purchase of Temperature Gradient Tunnel at ICAR-CAZRI, Jodhpur**

S.No.	Broad Specification	Qty.	Place of Supply
1.	<p><u>Temperature Gradient Tunnel</u> Construction of TGT structure: Dimension: 10 m (Length) X 4 m (Breadth) and 4 m (Centre Height) Structural Material: GI pipes (anti-corrosive and humidity resistance) of following section 50 mm x 50 mm structure with absolute strength to withstand maximum wind load of Jodhpur condition. GI pipe as per B.I.S/I.S.I., thickness should be at least of 2 mm. Covering material: Multi-layer, UV stabilized Transparent polycarbonate sheet (6 mm thick) with more than 85% transparency- PAR Clear-for all side; with 10-year onsite Warranty for 85% PAR, yellowing, breaking etc. for replacement, if any) Door: Aluminium Sliding doors with locking system Path: CC path in front of door Plinth protection upto 45cm from plinth</p>	04	ICAR-CAZRI, Jodhpur
	<p>Cooling system: 36 inch Exhaust Fan assembly with fan belt, safety Louver Kit, totally enclosed energy efficient thermally protected PSC motor integrated precision formed exterior shutters prevent drafts from entering through the external opening, Shutters open and close automatically, Balanced blade fan assembly totally enclosed for protection & OSHA compliance Housing constructed of durable 20-gauge rust resistant galvanized steel</p>	02 per unit (08)	
	<p>Cooling Pad with Pump and filters Evaporative CELDEC cooling pad (100mm thick x 3m Length x 1.5m ht.). The Cellulose Pad cross corrugated coated with anti-rot, rigidify & wetting resins, are made for maximum Efficiency, at minimum pressure drop. Sterile Mixed Cellulose Ester (MCE) filter. With all necessary framing material -rust resistant top-bottom-side frames of Aluminium, and UV stabilized- distribution & returning piping. Cooling pads should be covered from outside with 40 mesh UV stabilized nylon net (to prevent insect entry) with suitable framing to keep 1 foot gap between net and cooling pads. Common concrete tank atleast 2000 ltr capacity with proper enclosure for opening and closing for all four unit • 0.75/1 HP Monoblock pump – Separate for each unit</p>	04	
	<p>Temperature Sensor with Transmitter: Power supply :12-36 VDC Range: 0° to + 60°C Resolution : 0.1°C Repeatability: ± 0.1°C or less Accuracy of Temp: ± 0.3°C or less Output of Temperature: 4-20 mA Repeatability: better than ± 2 nos</p>	21	

	<p>Humidity Sensor with Transmitter Power supply 12-36V DC Humidity working range 0 – 100% RH Output for humidity 0-5V DC or 0-10V DC or 4-20mA Accuracy of humidity $\pm 2\%$ RH (10-95% RH at 25°C) Repeatability $\pm 0.3\%$ RH Sensitivity for humidity 0.1% RH drift rate per year $\pm 0.5\%$ RH</p>	04	
	<p>Ceramic Infrared Heater</p> <ul style="list-style-type: none"> • FSR 500 Heater, reflector connector with Panel • Input supply 200—240 VAC, 50 HZ, single phase, minimum 5-6°C, RH up to 90%. • Heating control should be done automatically from the PC based controller 	20	
	<p>Portable Sensor for in-situ measurement of soil moisture, soil temperature and electrical conductivity</p> <ul style="list-style-type: none"> • Measurement: Volumetric Soil Moisture content ($m^3 m^{-3}$ or % vol) • Soil Temperature: Deg Celcius • Electrical Conductivity: $mS m^{-1}$ • Soil Moisture Range: 0 to 100% Accuracy: $\pm 3\%$ • Electrical Conductivity: 0-300$mS m^{-1}$ Accuracy ± 10 (ECb) • Temperature Range- -5°C– 50°C Accuracy $\pm 1.5^\circ C$ • Measurement can be done at least up to 6.5cm or more depth by direct insertion into the soil • Sensor should be compatible with existing HH2 Hand Held Soil Moisture Meter (DeltaT Devices) 	02	
	<p>Fogging System:</p> <ul style="list-style-type: none"> • 0.75/1 HP Monoblock pump • 4-way Fogging nozzles 28 LHP with LPD, microtube 35 • Screen Filters – Double filtration • 16mm LDPE pipe with accessories 1 • Triple Layer Water tank LLDPE with ESCR, UV stabilized, Food grade, Algae Formation protected, ISI Marked 500L for each unit • Automatic operation with manual valve 	04 Unit	
	<p>Drip Irrigation:</p> <ul style="list-style-type: none"> • 0.75/1 HP Monoblock pump (Separate for each unit) • Screen Filters • Ventury with head assembly compatible with system (Separate for each unit) • 16mm LDPE blank laterals 200 mtrs • Dripper online (500 numbers) <p>NOTE: Common concrete tank atleast 4000 ltr capacity with proper enclosure for opening and closing for all four unit</p>	04 unit	
	<p>Control and Automation System</p> <p>A suitable software and hardware to be provided for control/ monitor of Temperature and Humidity and Data acquisition facilities to be provided on real time basis through PC. Memory back up is provided for data storage and free up gradation software to be provided.</p> <p>License software and dongle or hardware lock of SCADA to be provided with the system. Graphical view of data presentation option to be provided with the control system.</p>		
	<p>PC for data acquisition platform</p> <p>PC with 18.5” LCD monitor, 1 TB HD, 8 GB RAM or above, Licensed Window 10 or higher, Licensed MS Office; Antivirus for more at least 2 years) with Laser Jet printer with auto Duplex printing (Print, Scan, Copy; >25ppm).</p>	01 set	

	<p>Data logging with PLC & SCADA Software:</p> <ul style="list-style-type: none"> Data logger should have provision to connect with the SCADA/PLC software. SCADA or PLC software with networked data communications and graphical user interfaces for high-level process supervisory management with remotely access from the control room. SCADA or PLC act as a very powerful tool in monitoring and controlling the environmental parameters in real time mode and providing ready-made solutions to complex situations there by helping to maintain system stability and efficiency 	04	
	<p>CO₂ Sensor:</p> <p>Measurement range CO₂ 0 to 2,000 ppm vol. Accuracy ±30 ppm ±3% of reading Dimensions 100 mm x 80 mm x 28 mm Maintenance No maintenance required* Life Expectancy > 15 years Operation temperature range 0 to 50°C Operation humidity range 0 to 95% RH (non-condensing) Power supply 24 VAC/VDC Response time(T1/e) 2 min. diffusion time Communication Uart (Modbus)</p> <p>Outputs</p> <p>OUT1 linear output 0 to 10 V DC (CO₂) OUT2 linear output 2 to 10 V DC or 4-20mA(CO₂)</p>	05	
	<p>CO₂ distribution facility and accessories: 47 litre cylinders with certification Note: Manifold attached to connect 4 nos. of cylinder at a time.</p>	08 cylinder	
	CO ₂ Manifold for connecting 4 Cylinders with the arrangement of preheater for the smooth supply of the CO ₂ gas	02	
	Solenoid valves	04	
	Piping and Fitting	Standard	
	Necessary signal cables, power cables for heater, instrument cable, SMPS, relay card, contactors and necessary electrification	As per requirement	
	Installation, Commission and maintenance of the project limited to warranty period for trouble free operation.		
	<p>Civil work: One Control Room 10' x 15' with an attached storage room* 10' x 10'</p> <p>Foundation wall of bricks masonry of all sides of chambers complete plumbing work as requirement of facility:</p> <p>Excavation: Size: 4'x 4' x 4'. CC: 4' x 4' x 4''.</p> <p>Reinforced: MATE 10 mm dia., 150 mm c/c, column 4 no. 12 mm dia., Ring 8 mm dia, beam 4 no. 12 mm dia., ring 150 mm c/c, Slab 8 mm dia,125 mm c/c</p> <p>RCC: Footing M20, column M20, beam M20, Slab M20, Brick work: Well Burnt Chimney Brick with cement mortar 1:4(cement: sand) Covered Roof with RCC Plaster: 12 mm plaster single wall or half brick wall ratio 1:6 (cement: sand); 5 mm plaster on rough side ratio 1:6 (cement: sand) Tiles: Vitrified tiles 600 mm * 600 mm Putti: 1 mm average thickness like JK and Birla white cement-based putty</p>	01	

	<p>Paints: Wall paints Wash basin and sink with water supply and drainage</p> <p>Door and windows: Lockable flush door shutter 6'6''x3'6'' duly supported on wall with wooden frame 1 No., powder coated aluminium window with 4 mm glass panes 2 Nos. (size, 4' x 3' feet) duly fixed and protected by Aluminium frame.</p> <p>Covered Platform with Shelves with granite top (size 2'x 2½'x10' W H L) for keeping chemicals, fertilizers and various fixtures used in TGT</p> <p>Electrical fixtures: Standard necessary electrical points (5/15 amp Switch, Socket, LED lights, 02 Ceiling fans, 02 Exhaust fan etc.)</p> <p>NOTE: Carpet area Size 10 feet x 15 feet, M15 CC floor 4'' brick wall duly supported by adequate number of RCC pillars. Structure should be strong and rain leak proof. All commissioning and installation, civil works, etc. is sole responsibility of suppliers.</p> <p>*One Storage room made of Powder Coated Corrugated Sheets 10' x 10' attached with Control Room with CC flooring.</p>		
	<p>Warranty: 2 Years after successful installation</p>		
	<p>CMC: 3 Years Comprehensive Maintenance Contract (CMC) after completion of Warranty period.</p>		
	<p>AMC: AMC for 4 years should be quoted optionally.</p>		
	<p>The above specifications should be supported by authentic technical literature.</p>		
	<p>Institute reserves the right for confirmation of the specification by demonstration from the technically successful bidders.</p>		
	<p>Firm should have ISO certification ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018</p>		
	<p>Training: 07 days training/demonstration for complete operation after installation.</p>		

(Signature of the Firm with Seal)