



भा. क. अनु. प. – केन्द्रीय शुष्क क्षेत्र अनुसंधान संस्थान
 ICAR - Central Arid Zone Research Institute
 जोधपुर (राजस्थान) 342 003 / Jodhpur (Rajasthan) 342 003
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F. No. 4(16)2024-2025/Adm. IV/

Dated: 30.09.2024

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 Supply and Installation of GC for N₂O Estimation at ICAR-CAZRI, Jodhpur.

Critical Date Sheet

1.	Date and Time for Issue/Publishing	05.00 PM on 30.09.2024
2.	Document Download / Sale Start Date and Time	05.00 PM on 30.09.2024
3..	Document Download / Sale End Date and Time	02.00 PM on 10.10.2024
4.	Bid Submission start Date and Time	05.00 PM on 30.09.2024
5.	Bid Submission End Date and Time	02.30 PM on 10.10.2024
6.	Pre bid conference presentation of the instrument	02.30 PM on 04.10.2024
7.	Date and Time for Opening of technical Bids	03.00 PM on 11.10.2024
8.	Date and Time for opening of Financial Bid	After finalize the Technical Bid
9.	Address for Communication	Director, ICAR-CAZRI, Jodhpur-342003 (Raj.) India
9.	Bid Security (Earnest Money)	Bid Security Rs. 4,00,000/- 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. 4(16)2024-2025/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 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., & 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 30 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) an Earnest Money Deposit (bid Security) 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 will 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 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.

‘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 its exemption, if any.	
b)	Scanned copy of Firm's registration issued by the Central Govt./State Govt.	
c)	Scanned copy of 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 3 years.	
n)	Kindly provide list of atleast 3 years for installation of equipment in government/private Institute	
o)	After Technical evaluation of the bid and before the opening financial bid, we will visit the vendors site/online demonstration to validation of the suitability of the offered instrument for our sample	
p)	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. 4(16)2024-2025/Admn.IVTECHNICAL BIDSchedule to tender**TECHNICAL SPECIFICATION OF Purchase of GC for N₂O Estimation at ICAR-CAZRI, Jodhpur**

S.No.	Broad Specification	Quantity
1	GC for N₂O Estimation	01 No.
	<p><u>Technical Specification:</u> Gas Chromatograph Analyser system with Head Space Sampler (HSS) interspace should be suitable for analysis of three greenhouse gases N₂O, CH₄ and CO₂ in ambient air with a single sample injection (automatic) with the following minimum configuration.</p> <p>Application: Greenhouse gases <i>i.e.</i> N₂O, CO₂ and CH₄ estimation from the ambient air and soil gases samples very precisely using GC</p> <p>1. GC Mainframe:</p> <p>Gas Chromatograph (latest model) with Head Space Sampler (HSS) interface for Greenhouse Gases Analysis with simultaneous detection of greenhouse gases in air samples air samples [e.g. nitrous oxide (N₂O), carbon dioxide (CO₂), methane (CH₄)] with suitable columns and provision for automatic injecting sample having the following lower and upper detection limits</p> <ul style="list-style-type: none"> • Nitrous oxide (N₂O): ≤ 30 ppb to 10 ppm (MDL ≤ 30 ppb or better) • Carbon dioxide (CO₂): 0.4 ppm to 0.2% (MDL ≤ 0.4 ppm or better) • Methane (CH₄): 0.2 ppm to 20% (MDL ≤ 0.2 ppm or better) <p>Gas Chromatograph that provides superior performance.</p> <ul style="list-style-type: none"> • It have easy access to maintenance and service modes system interface. • It have retention time repeatability <0.008 %; area repeatability <0.5 % RSD. • It have hands free leak check and retention time locking. <p>2. Column OVEN</p> <ul style="list-style-type: none"> • Column Oven can accommodate two column with a temperature range from +5°C to 450 °C. • Set point resolution of 0.1 °C or better; • Must support minimum 20 ramps or more; • Maximum temperature ramp rate of 120 °C / min or better. • Oven cool down from 450 °C to 50 °C must be in 4 min or less with built-in programmable oven cool down rate readily available to cater for columns of different stability. • Temperature stability for < 0.01 °C for a 1 °C ambient change, ensuring the maintenance of oven internal temperature with respect to external fluctuations. 	

3. Column selection:

- Employ a column specially designed for separating nitrous oxide (N₂O) from other atmospheric gases such as a Porapak Q or molecular sieve column.
- Suitable columns: 2 numbers each to analyze the greenhouse gases.

4. Pressure/ Flow control pneumatics:

- Microprocessor based latest version GC (with advanced pneumatics, MSD ISO 9001 certified with large Graphical LCD display to view Chromatogram and built in GC System check and self-diagnostic function).
- System must have EPC/AFC/PPC control for all injectors and detectors with single point control via software.
- It must have the capability to install up to eight EPC/AFC.
- Automatic leak testing, system must have automatized pneumatic controls for all gases like carrier gas, make up gas, detector gas, etc.
- Pressure set point and control precision to 0.001 psi. Pressure/flow ramps must be minimum three.
- Future upgradability should be possible for other detectors.
- Head space transfer line must be fully integrated with mainframe.
- Complete system can be fully controlled by PC software
- Carrier and makeup gas must be selectable to He, N₂, H₂ and Argon/Methane.
- System must have factory fitted & tested for back flushing & column switching/changing along with the system software acquires chromatograms from all the detectors simultaneously with one injection only.

5. AUTO SAMPLER:

Head Space Sampler (HSS):

- Typical area repeatability <0.7% RSD.
- Typical carryover <0.0001%.
- Auto injector must be with minimum 48 vials capacity or more.
- Overlapping up to 12 vials to maximize throughput or better.
- Multiple headspace extraction mode with minimum 100 extractions per vial or more.
- In-build vial shaker.
- GC column selection from 50 to 530 µm.
- Compatibility with headspace vials of 10 mL, 20 mL, and 22 mL sizes with unrestricted use of different vial sizes within a single sequence.
- All temperature zones (oven, valve and loop, transfer line) have set-point increments in 1 °C with 0.1 °C resolution for actual temperatures.
- Oven temperature: Ambient +5 °C to 300 °C or better
- Valve and Loop temperature: Ambient +5 °C to 300 °C or better

- Transfer line temperature: Ambient +5 °C to 300 °C or better
- Vial pressurization must be fully controlled by the included EPC/AFC/PPC.
- Pressure setpoints must be adjusted by increments of 0.001 psi.
- Flow setpoints must be adjusted by increments of 0.01 mL/min.
- Separate injector unit for headspace sampler
- Should have a closed sampling design without exposure to atmosphere or ambient temperature. System must be syringeless to avoid exposure to atmosphere/contamination. System must be controllable through software only.
- Headspace should have automatic leak check, power saving and gas saving facility.

6. Browse interface:

- Touchscreen browser interface
- Mobile access features/ remote control

7. Upgradability: Quoted GC must be upgradable with Single/triple/QTOF/ Quadruple Mass Spectrometer in future.

8. Valves and Catalyst:

Suitable automatic gas sampling valves, column switching valves & injecting to column for desired gas analysis. All gas control should be EPC/IEC/AFC.

- Gas sampling valve-1
- Column isolation valve-1
- Other valve-2
- Nickle catalyst-1

9. INJECTOR

- Multi-port gas sampling valve with auto injector facility from tedlar bag or gas tight syringe and manual gas sample injecting facility should be there.
- Suitable injector for headspace

10. DETECTORS :

Flame Ionization Detector (FID):

- Minimum detectable level (for tridecane): <1.2 pg C/s or better
- Minimum temperature should be 450 °C or more.
- Linear dynamic range >10⁷ or better
- Data rates up to 1,000 Hz or better.
- Must have the Flameout detection and automatic reignition capability.
- FID with methanizer, detector must be compatible with all columns: Packed, capillary and molecular
- Able to control up to 3 channels of gas, i.e. H₂, make-up and air (with electronic ON/OFF). The control range are to be for air: 0-500 ml/min, H₂: 0-100 ml/min, and make up gas (N₂ or He): 0-50/ 100 ml/min.

Electron capture detector (ECD):

- Minimum detectable level: <3.8 fg/mL lindane or better
- Minimum temperature should be 400 °C or better.
- Linear dynamic range $>5 \times 10^4$ with lindane or better
- Data rates up to 500 Hz or better. Detector must be compatible with all columns: Packed, capillary and molecular
- Able to supply a constant flow make-up gas (N₂ or Ar) for the inertness of ECD chamber with flow control of 0-200 ml/min.

Customizable specifications:

- Manual gas sample injecting facility should be there.

11. Data management and acquisition system (PC & Printer):

- Latest branded PC with licensed MS office package, antivirus, compatible PC for software
- Intel Core i5 processor, 3GHz or better
- 8.0GB DDR RAM or more
- 1 TB Hard disk storage, 128 GB SSD or more
- At least 24" LCD monitor
- Latest Window operating system (Professional-10/11)
- At least 3/4 LAN and 4/5 USB port availability or better
- Wireless Keyboard & Mouse
- LaserJet black & white printer

12. Software System:

- Latest operating system compatible workstation, original window-based licensed software from the same manufacture only which includes complete GC control, Multi-channel real time chromatographic data acquisition and post-run analysis.
- It should also include high speed data acquisition and bulk analysis compatibility, full qualitative & quantitative processing functions, multi-function compatibility, Audit Trail, Validation Assistant, System Suitability, QA/QC functions, All-in-one file configuration for easy data transfer, customized report generator, networking capability, data management etc.
- Software performing data analyses at least as per DIN/ISO/US-EPA, calibration, blank correction, data import, export, handling and reporting, quality control protocols, computer based training.

13. Necessary consumables/accessories:

- Headspace Vials with caps, septa and storage box (20 ml)- 200 Quantity

- Headspace vial crimper- 1 Quantity (electronic which has rechargeable battery along with accessories)
- Headspace vial decapper- 1 Quantity (electronic which has rechargeable battery along with accessories)
- Nickel catalyst (1 quantity); Tedlar bags (10 nos)
- A vial evacuation system to evacuate ≥ 10 sample vials at a time.
- FID Jet- 1 Quantity
- Greenhouse Gas Checkout Sample-1 Quantity
- 12Ft 1/8 2mm HayeSep Q 80/100 UM- 1 Quantity
- 6Ft 1/8 2mm HayeSep Q 80/100 UM- 1 Quantity
- Fused Silica column Deactivated -0.530mm X 1m- 1 Quantity
- A purging system to purge the vial/tedlar bags.
- Hdspc Al sfty crmp cap, PTFESi, 20 mm, 100 pk
- 20mm silver alum safety crimp cap 100 pk (01 no.)
- 20mm Tan PTFE/White silicone septa, 100 pk (1 no.)
- Vial, HS, Screw, 20 ml, clr, 100pk (01 nos)
- Hdsp cap 18 mm magnetic PTFE/Silicone septa 100pk (05 Nos)
- Vial, HS, crimp, FB, 20 ml, clr, cert, 100pk (01 nos)
- Ergonomic manual crimper for 20mm caps (01 no.)
- Ergonomic manual DeCapper for 20mm caps (01 no.)
- Gastight syringes (PTFE Lucerlock with needle) of 500 μ l and 1000 μ l (1 nos each)
- Gastight syringes (PTFE Luerlok syringe) of 25 ml and 50 ml (1 nos each) along with three needles with each syringe.
- **Calibration Gas Cylinders:** - calibration gas cylinders (10 L each) along with double stage SS regulators for each cylinder with below concentrations:

	N ₂ O (ppb)	CO ₂ (ppm)	CH ₄ (ppm)
Cylinder 1	100	350	1.5
Cylinder 2	300	1000	6.0
Cylinder 3	1000	2000	1000.0

Certification:

- Ensure the all three greenhouse gases *i.e.* N₂O, CO₂ and CH₄ analysis provides a certificate of analysis.

ACCESSORIES for GC Operation:

Gas Cylinders:

- Complete gas supply system with 47L capacity gas cylinders for each of H₂, H₂, Zero Air and Ar (95%) + CH₄ (5%) gas mixture.
- Hydrogen gas cylinder with Gas Purification Panel and double stage regulator-

	<p>1 Quantity</p> <ul style="list-style-type: none">• Nitrogen gas cylinder with Gas Purification Panel and double stage regulator- 1 Quantity• Zero Air gas cylinder with Gas Purification Panel and double stage regulator- 1 Quantity• 5% CH₄ in 95% Argon cylinder for μECD makeup gas• Double/single stage gas regulators and gas purification pane; with complete tubing and gas regulation system for all 4-gases: H₂, H₂, Zero Air and Ar (95%) + CH₄ (5%) gas mixture. <p>UPS: Branded compatible online UPS of 5kVA with 30 Min. backup or better.</p> <p>Air conditioner (AC): Branded 1.5 ton split AC with timer</p> <p>Power requirement: 220/240 Volt; 50/60 Hz</p> <p>Warranty:</p> <ul style="list-style-type: none">• Onsite warranty one year on instrument including PC, printer and UPS. <p>Safety & Regulatory Certificate:</p> <ul style="list-style-type: none">• The system should accompanied with Conformity Certificate.• Quoted model system should be latest with good after Sales Support and should have ISO 9001 approval certificate. Model must be ISO/CE certificate or other relevant certificate. <p>Pre-installation requirements All the necessary pre-installation requisites required for the complete installation of the system.</p> <p>Note:</p> <ol style="list-style-type: none">1. Original brochure of the quoted model should be submitted. Specification claimed for each component must be supported by printed literature of the company. The submitted printed literature must also be available on the OEM website for cross-checking the specifications and its compliances.2. Country of origin and manufacture should be mentioned.3. Quoted model must be Factory fitted with valves, column & detector and tested for greenhouse gas and trace gas analysis4. Offered Specs should be mentioned in the original detailed technical catalogue of the quoted model.5. Original brochure of the firm to be supplied and same should be reflected in the website of the firm.6. Provide compliance statement sheet with technical bid and if there is any deviation in above mentioned specifications should be clearly highlighted in remarks.7. Quoted model system should be latest with good after Sales Support and should have ISO 9001 approval.8. Entire system should be provided directly by the manufacturer and in no case local components will be accepted except laser printer, PC and UPS which can be provided from local sources. Technical bids with compatible modules from another manufacturer will not be evaluated.	
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	<ol style="list-style-type: none">9. Minimum 10 installations of quoted model in National R&D Institutions for the past 5 years with supporting documents of purchase orders/latest service reports/installation reports to be enclosed.10. Original software for the equipment should be provided and free up-gradation of software during the warranty period.11. Performance certificates of the quoted model to be attached12. Anything extra required for installation should be quoted along with instrument.13. Warranty and maintenance<ol style="list-style-type: none">a) The complete instrument should be under warranty at least for a period of one year from the date of installation.b) In case of breakdown during the warranty period, a competent service engineer of the supplier should make as many visits as are necessary to rectify the problem and replace the faulty parts, without any liability of cost. But it should be repaired within 72 working hours from the date and time of complaint lodged by the user.c) Annual maintenance contract (AMC) and Comprehensive maintenance contract (CMC) quote the cost of onsite annual maintenance for at-least three years after warranty period (Optional).14. Spare parts the supplier of the instrument must confirm in writing that the spares for the entire instrument will be available for a period of at least 7-10 years after the model of equipment supplied has been phased out. For frequently required spares, there should be adequate inventory with the Indian agency.15. List of service staffs and centers available in India.16. On-site Installation should be provided free of cost. Onsite training/demonstration to the scientists to be provided at no additional cost.17. Manual: One set of operating manual and service manual including detailed drawings and circuit diagrams (in English) should be provided with the instrument.18. Quotations should be complete in all respects at first instance; incomplete quotations and quotation of firms, who merely cut paste specifications from tender document are liable to rejection.	
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(Signature of the Firm with Seal)