



हर कदम, हर डगर
किसानों का हमसफर
राष्ट्रीय कृषि अनुसंधान परिषद

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भा0 कृ0 अनु0 प0—भारतीय मृदा विज्ञान संस्थान
नबीबाग, बैरसिया रोड, भोपाल – 462038

ICAR-Indian Institute of Soil Science

Nabibagh, Berasia Road, Bhopal – 462 038 (M.P.)

Tel. No.(0755)2730970/2747375 (Ext. No. 233) Fax. No. (0755) 2733310

F.No.5-392/2015-16/P&S/IISS

Due date: 30.10.2015

TENDER NOTICE

Tenders under two bid system are invited for following equipments as follows:-

Item Sr. No.	Equipments Name
01	Photosynthesis Analysis System
02	Open Top Chamber with control and Automation
03	Soil Moisture Meter (TDR) with accessories
04	High Energy Ball Mill
05	Soil Water permeameter with Soil Cores
06	Digestion chamber with scrubber

Last date for submission for tenders is 30.10.2015. The tender will be opened in the aforesaid office at **11 AM on 31.10.2015** For detailed tender notice, specification of the equipments, terms and conditions and EMDs, Tender fee etc. the Institute's website www.iiss.nic.in and CPP portal may be accessed.

I/c Administrative Officer



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Tel. No.(0755)2730970/2747375 (Ext. No. 233) Fax. No. (0755) 2733310

NO. 5-392/2015-16/P&S/IISS

Due date: 30.10.2015

TENDER NOTICE

Sealed tenders under two BID systems are hereby invited from reputed and registered manufacturers and/or their authorized dealers and suppliers for the supply of following items:

(01) Photosynthesis Analysis **(02)** Open Top Chamber with control & Automation **(03)** Soil Moisture Meter (TDR) with accessories **(04)** High Energy Ball Mill **(05)** Soil Water permeameter with Soil Cores **(06)** Digestion chamber with scrubber

The blank tender form along with the schedule can be obtained by making a written request on “Letter Head” of the concerned firm to the “Administrative Officer, Indian Institute of Soil Science, Nabibagh, Berasia Road, Bhopal-462 038” on payment of Rs.500/- (Rs. Five hundred only) in the form of D/D favouring “ICAR UNIT, IISS payable at Bhopal on any working days up to 30.10.2015. In case of seeking tender by post, a self stamped envelope of appropriate value worth Rs. 50/- postage stamps must be enclosed. **Last date of receipt of duly completed sealed tender is 30.10.2015.** The tender will be opened in the aforesaid office at **11 AM on 31.10.2015.**

The detailed specification of the above tender is also available at the Institute website www.iiss.nic.in and CPP Portal. **In case of downloading tender document from website a DD worth Rs.500/- drawn in favour of “ICAR UNIT, IISS, BHOPAL” may be enclosed with tender document separately, failing which the tender will not be considered.**

I/c Administrative Officer

Indian Institute of Soil Science (ICAR)
Nabibagh, Bserasia Road, Bhopal – 462 038 (M.P.)
Tel. No. (0755) 2730970/2747375 (Ext. No. 233) Fax. No. (0755) 2733310

SCHEDULE OF TENDER

1	Tender No.	:	5-392/2015-16/P&S/IISS
2	Date of sale of tender documents	:	From the date of publication of tender to 30.10.2015 during working days/hours.
3	Last date of receipt of complete tender	:	30.10.2015. up to 05:00 PM.
4	Date of opening of tender	:	At 11.00 AM on 31.10.2015 in the Committee room of IISS, Nabibagh Berasia Road, Bhopal..
5	Earnest Money Deposit (Bid Security) (Tender will not be considered without EMD deposit).	:	Through Demand Draft drawn in favour of “ ICAR UNIT, IISS, BHOPAL ”. The amount of EMD for each item is mentioned along with the specification of the item/laboratory equipments (page No. 06 to 12).
6	Tender Fee	:	Rs. 500/- thorough DD in favour of “ ICAR UNIT, IISS, BHOPAL ”
7	General & Special terms & conditions	:	Enclosed (page No. 01 to 05) to be signed and enclosed along with the tender.
8	Specification of the equipment	:	Enclosed (page No. 06 to 12).
9	Formats and Proformas	:	Enclosed (page No. 13 to 20).
10	Mode of submitting tenders	:	Separate quotations in a separate envelope under two bid systems should be submitted for each item. Each envelope should clearly state at the top Item Number, Name of the item/ equipment of Tender and EMD particulars enclosed for the item. All these envelopes should be then placed inside another envelope clearly stating at the top TenderNo.5-392/2015-16/P&S/IISS DUE ON 30.10.2015. The technical bid and the financial bid should be sealed by the bidder in separate covers duly superscribed and both these sealed covers are to be put in a bigger cover which should also be sealed and duly superscribed.
11	Original printed catalogue/leaflets	:	Only original printed catalogues and leaflets are to be attached in support of the specification. The technical literature downloaded from net should be signed & affix proper seal of the firm.
12	Any change in the above schedule will be displayed on the Institute notice board/IISS website.		

NOTE:- Tenders documents downloaded from website of the Institute should be accompanied with DD for Rs, 500/-, without which tenders will not be entertained

I/c Administrative Officer

GENERAL TERMS AND CONDITION FOR TENDERERS
(To be signed and submitted along with the Tender by the Tenderers)

Along with tender and offer following information may clearly be mentioned: -

01. Valid sales tax registration certificate may be furnished.
02. Tender would be based on two bids, one on technical and second on financial. The technical bid will be opened first and examined and if found as per notification the financial bid would be opened.
03. Authorized Dealership certificate if any for which rates have been quoted may be attached.
04. Warranty/Guarantee period with details of terms and conditions may be clearly mentioned.
05. For Annual Maintenance Contract in future, rates and terms and conditions may be separately mentioned for five years.
06. Extent of after sales service facility in Bhopal or at nearest area (area be indicated) must be indicated. Relevant postal address and modus operandi may be indicated.
07. Price to be quoted should be FOB/FOR at Indian Institute of Soil Science, Nabi Bagh, Berasia Raod, Bhopal and **valid for 120 days from closing date of tender.**
08. It should be clearly stated whether the rates quoted by the firm are inclusive of Central/State Sales Tax, Excise Duty as applicable and packing/ forwarding charges etc. In case rates quoted are exclusive of above, **full rates** of the same may clearly be indicated. **No 'C' or 'D' form will be issued.**
09. In all cases, the manufacturer's name and other relevant details regarding specification, technical literature etc. must be enclosed.
10. Incomplete or vague tenders will be rejected. Filled in tenders should be accompanied with the filled in proforma (schedules questionnaire etc.) There should be no cutting/overwriting. The cuttings if any should be duly attested. Unattested/amended/overwritten figures will not be considered.
11. **Payment Terms:** Stores are to be supplied **on bill basis only**. Payment will be released within reasonable time, say 30 days after successful and satisfactory execution of supply orders and installation. Request for advance payments, delivery against payment or payment against dispatch documents through bank will not be accepted.
12. In case any firm quoting **imported items** the following information/ documents are required to be furnished with the tender: -
 - i) Principals' proforma invoice on FOB basis, clearly indicating Indian agents commission, in triplicate
 - ii) Payment will be made through Letter of Credit - 90% against delivery & 10% after satisfactory installation and demonstration of the instrument/facility.
 - iii) If item is proprietary in nature, please furnish a certificate in respect of the item. That it (or its equivalent specifications) is manufactured only by M/s.....in India or abroad.
 - iv) Facility of after sales & service, preferable local center may be indicated.
 - v) Indian agent should submit a copy of the agreement with their principal firm.
 - vi) Please indicate if you are registered as an Indian agent at DGS & D for appropriate item in pursuance of Govt. of India O.M.No.F.23 (I) E-II (a)/89 dated 31.01.89 or not. If yes, enclose a copy.
13. In case delivery/supply/installation/commissioning/fabrication is not done as per stipulated/ mentioned prescribed date of this Institute supply order, a penalty can be charged @ 2% per week, subject to a maximum of 10% of the cost. The supply order will be cancelled automatically at the supplier's risk and cost including forfeiting the EMD/ Security Deposit. Any delay of inability to supply ordered stores may please be intimated immediately.
14. EMD (Bid Security): In the form of **Demand Draft only** drawn in favour of "**ICAR UNIT – IISS, BHOPAL**" on any nationalized bank at Bhopal (The amount of EMD to be deposited for each item is mentioned alongwith the specification of the equipment)

15. Security Deposit (Performance Security): 10% of the contract /order amount in form of Demand Draft in favour of ICAR UNIT, IISS, BHOPAL, FDR or Bank guarantee from a nationalized bank, whichever to protect against non – performance of the contract and may also cover warranty obligations, installation and/or commissioning and final acceptance requirements. It is essentially for a minimum period of two months beyond the date of completion of performance obligations under the contract/supply order.
16. The Director reserves the right of accepting or rejecting all or any application for issue of tender form and subsequently of accepting or rejecting all or any part of the tender without assigning any reason. Further, the Institute reserves the right to verify the information/document furnished and to carry out assessment of capability of the tenders, if the circumstances so warrant in the overall interest of the Institute, the decision of the Director, IISS, shall be final and binding on the Tenderer.
17. This Institute reserves the right to reject the stores/supplies in part or in full covered in the order at any stage prior to payment if they are not according to the specification, Part supplies against this order will not be accepted unless otherwise agreed, prior to execution of supply only under special circumstances on full justification/reasons to be given.
18. In case the quoted items is under the running rate contract concluded by DGS&D or any other Govt. Agencies, copies of the rate contract may also be enclosed with your quotations. Your willingness to supply store on the basis of rate contact may also be submitted/indicated.
19. **Minimum period of delivery** of the stores/ material should clearly be specified in the tender/quotation. However, **immediate** ready stock delivery would be preferred but **not later than 4 weeks**.
20. All communications must be addressed to the Administrative Officer of the Institute by DESIGNATION ONLY and not by name.
21. Institute will not be responsible for any postal delay. The last date of receipt of duly completed tender will not be extended in any case.
Above terms and conditions are acceptable, wherever applicable (to be enclosed along with your tender document.

NAME OF THE FIRM

SIGNATURE

RUBBER SEAL

INDIAN INSTITUTE OF SOIL SCIENCE
NABIBAGH, BERASIA ROAD, BHOPAL - 38
 FAX NO.0755 2733310 TEL.NO.2730970 & 2734221

SPECIAL CONDITION FOR THE TENDER/QUOTATION FORM

(To be signed and attached along with the tender documents)

1. The sealed quotations and tender document duly completed in all respects, along with Earnest Money should be sent by addressing a letter on the letter pad of the firm to the Administrative Officer of the Institute at the aforesaid address.
2. The amount of Earnest money to be deposited for each item is mentioned along with the specification. Any Earnest Money deposited (EMD) earlier to this Tender notification will not be considered for this tender.
3. Separate quotations should be submitted for each items and it must be enclosed in a separate envelope. **Each envelope should clearly state at the top Item Number, Name of the item/equipment of Tender and EMD particulars enclosed for the item.** All these envelopes should be then placed inside another envelope clearly stating **at the top Tender No. 5-392/2015-16/P&S/IISS Due on 30.10.2015** along with a forwarding letter giving details as under. The tenders of the firm not following these instructions will be rejected and EMD will also be forfeited. The technical bid and the financial bid should be sealed by the bidder in separate covers duly super scribed and both these sealed covers are to be put in a bigger cover which should also be sealed and duly super scribed.

Sl.No	Name of the equipment quoted in the tender	Item No.	DD No & date	Amount
Total Nos. of Items quoted -----		Total EMD deposited.-----		

4. The rates should be quoted separately for each components of the item whether the item(s) are of the main unit or of the accessory or spare parts and should be on FOR/FOB basis.
5. The unit price should be given separately for each item(s) of the "basic unit"(giving details of the components of the basic units, essential accessories and spares to make the basic unit fully functional at the time of installation at the Institute. No such items should be left out for want of which the basic unit could not be made fully functional), (ii) Each items(s) of the Additional Accessories, each item(s) of spare part(s), etc required for keeping the equipment or items fully functional.
6. Price should be inclusive of all discounts.
7. Rates of "Sales Tax" and "Other Taxes" leviabale should be indicated in clear terms separately i.e. Sales Tax or Central Sales Tax @ ----- for items at Sl. NO. _____ will be charged extra. Sales Tax Registration No. both under Central and State Tax Act Rules should be specifically indicated. FORM "C" or "D" WILL NOT BE ISSUED BY THIS INSTITUTE. Where ever applicable manufacturer or representative should submit the Excise Duty Gate Pass for the Complete Unit/System as per rule.
8. (a) Manufacturers name, their Trade Mark and Brand of item(s) should be mentioned in the quotation. (b) Only printed original illustrated leaflets, literature giving technical details, particulars, specifications etc. supporting the rates quoted, should be sent along with the quotation. **Tenders without the original printed literature will not be considered. The photocopies of the literature will not be considered at all.** (c) Only clarifications, if any, about the contains given in the printed leaflets, literature etc. may be considered and should be attested along with the printed literature at the time of submitting the quotation. **(d) No correspondence/clarification, unless asked for will be entertained after the due date of submission of the Tenders i.e.**
9. The rates quoted should be valid at least up to **for 120 days after the closing date of tender.**
10. In all matters of dispute, the decision of the Director of this Institute shall be final and binding on the Tenderer.
11. Delivery of the stores/material should be made within a period of 30 days from the date of issue of supply order by the institute.
12. Quantities of each item to be purchased may vary according to actual requirement of this Institute at the time of placing order.

13. Payment will be made within a reasonable time say 30 days and only after the Instrument/Equipment is satisfactorily installed by the representatives of the firm, or of other material/stores (which do not require installation) received in good condition and according to the specifications of the Institute. ADVANCE PAYMENT CANNOT BE MADE AS PER GOVERNMENT RULES. Therefore quotation with condition for making advance payments will be rejected (Except for items which have to be imported as per procedures prevalent at the time of imports).
14. The sealed quotations/Tender should reach this office by not later than **30.10.2015** and only through Registered post/Speed Post/Courier. The envelope containing the quotation should be super scribed as "**TENDER NO. 5-392/2015-16/P&S/IISS TENDER FOR (Name of item-----)**" **DUE DATE 30.10.2015. Tender/quotations received without this superscription will not be considered.** The technical bid received will be opened at **11 AM** on the next working day of the Due date of receipt of Tender in the aforesaid Institute Office. Tender/quotations received after the specified due date will not be considered at all and will be summarily rejected. Tenderers are at liberty to be present or authorize in writing on their letter pads their representative to be present at the time of opening of the technical bid.
15. The Institute reserves the right to reject any or all the quotations/Tender(s) received without assigning any reason thereof.
16. Sample: The Institute will inspect sample of the approved items, wherever applicable, and if approved the same will be retained by the Institute. The payment of the same will be affected when supply of the order is fully made.
17. Security Deposits: The firm shall within ten days from the communication of the acceptance of the Tender by the Institute furnish a Security Deposit of Ten percent of the total consideration payable under the contract.
18. Duration as well as terms and conditions for training, if required, (including places and period of training) for Handling and Maintenance of the sophisticated equipments may also be clearly stated while submitting the tender.
19. A certificate in original or a photocopy of the same duly attested by the Oath Commissioner, that the quoted item is a proprietary item and that they are their Principal or the manufacturer of the item should be provided, if required/applicable.
20. All the pages of the Tender/quotations proforma should be signed & numbered by the Tenderer with a seal of the firm.
21. The Agents, sole agents/distributors of the principal firms, if quoting on behalf of their principal manufacturers, they should attach a "Recent original letter from their principal that they are their authorized agent" when submitting the tender.

**SPECIAL INSTRUCTIONS TO TENDERERS QUOTING FOR THE ITEMS
TO BE IMPORTED (to be signed & attached alongwith the tender).**

- The sole agent/representative of the foreign firms should arrange quotations for the items to be imported on only original Proforma Invoice (in triplicate) and printed literature from their principals. Institute will not accept any telex or photocopy of the proforma invoice and of printed literature. The proforma invoice should clearly indicate the following:-
22. (A). Unit price of the basic unit: (Give details of the items included in the basic unit). It should include all items of basic accessories and spares required to make the basic unit/equipment fully functional at the time of Installation. Give details of the taxes, packing, forwarding, insurance, shipment charges etc.
(B). Additional Accessory item(s): which would be helpful in increasing the work efficiency and precision of analysis etc. should be quoted separately and item wise giving details of Taxes, packing, forwarding charges etc. separately for each unit of Additional Accessories. The price should be inclusive of satisfactory installation charges of the equipment/ instrument/ accessory at the Institute premises by the sole agent/ dealer/ representative of the principal. No additional charges will be paid for the installation for making the instrument fully functional therefore, include or quote charges, if any, for installations/making the equipment and accessories functional.
 23. Additional spares required, in addition to the one quoted as per Sl.No.22, for maintenance and/or repair of equipment in times to come, replacement of the worn-out and keeping the equipment in working order for at least Five years should be quoted separately item wise.

24. The firm should indicate the commission of the Indian Agent separately which is to be paid in Indian currency according to the Foreign Exchange Regulation Act (FERA); and after the satisfactory installation of equipment at the Institute. Wherever the commission of the Indian Agent is less than five percent of the value of the equipment(s) the Indian agent should furnish an undertaking that they will furnish a bank guarantee for the balance amount falling short of 5%.
25. The sole agent/representative of the firm should clearly indicate the terms, conditions & rate for after sales service facilities to keep the instrument in fully working conditions. In case there are some charges for the same these should be clearly shown for a period of at least FIVE YEARS BUT PAYABLE ANNUALLY.
Service Contract/Warranty: Submission of details of after sales service contract/warranty period along with the tender is compulsory. The terms and conditions of after sale service should be signed by the authorized agent in India and should constitute a part of the tender/quotation. Tenders without this may be rejected. The agent/representatives of the principal firm(s) not quoting for after sale services of equipment would imply that they are unable to provide such after sales service and their quotations will not be considered.
26. The agent should produce evidence (a recent original letter from their principal) that they are the authorized agent/ representative/dealer of the principals in India failing which the quotation will be rejected.
27. The Agent should attach valid registration certificates of the DGS&D (Photocopy attested by the oath commissioner), if applicable.
28. The Tenderer should show the weight of each item, packing (dimension) etc. and tenderer should quote their rates on FOB (Free on Board) basis only. Any tender quoting C.I.F. value will not be considered. The proforma Invoice should be valid for 120 days from closing date of tender.
29. Tenderer should clearly indicate on the proforma Invoice the Terms and Condition of L/C. Banking charges outside India shall be borne by the supplier.
30. The terms and conditions other than those indicated in the proforma Invoice will not be entertained at a later date.
31. If there are any special features in the equipment/stores, it should be highlighted.
32. If in the past equipment/stores has been supplied to any Govt., ICAR, Universities, and other organization in India their addresses with telephone/fax no's of the organization may be supplied. The performance report from the user organization for the same may be attached.
33. TDS tax will be deducted at source as per Income Tax Act 1961(Under Section 194 - C).
34. Photocopy of catalogue/literature will not be considered. Only original printed literature/ catalogue of the equipment mentioning the technical details of the equipment quoted is to be enclosed failing which your tender will not be considered.
35. The Indian electrical conditions should be compatible with foreign equipments, by suitable placing the adaptor (to be provided by the Indian agent)

I have carefully read the General terms and conditions and Special terms and conditions for the tender /quotation form and are acceptable to me and all the required formalities as desired by you have been enclosed/completed.

NAME OF THE FIRM

SIGNATURE

RUBBER SEAL

Name & Specification of the equipments.

ITEM NO.	NAME OF THE ITEM	Qty.	EMD Amount (Rs.)
(01)	Photosynthesis Analysis System	01	60000/-

Specification

Photosynthesis Analysis System:-

The details of specifications are given below.

1. **System console:** It should be light weight, portable and system console should have minimum 128 MB RAM for operation along with additional slot for up-gradation of memory and integrated power supply for all controls. System console should have LCD backlit display of multiple lines along with ASCII keyboard. It should be equipped to measure Photosynthesis, Respiration, Transpiration, RH, Chlorophyll Fluorescence, Leaf and Air Temperature, Stomatal Conductance, Internal C_i , water use efficiency and soil CO_2 flux. The system should include sensor heads with CO_2 or H_2O analyzer, standard leaf chamber 6 cm^2 with PAR sensor, rechargeable batteries, flash card, ethernet connectivity, spare kits and carrying case.
2. **CO_2 analyzer :** Non Dispersive Infrared Gas Analyzer; Minimum Range: $0\text{-}3000\ \mu\text{mol mol}^{-1}$; Accuracy (maximum deviation) $5\ \mu\text{mol mol}^{-1}$ in the $1000\ \mu\text{mol mol}^{-1}$ measurement range, Precision: peak to peak (4 second averaging) at $300\text{ - }400\ \mu\text{mol mol}^{-1}$ should not be more than $0.2\ \mu\text{mol mol}^{-1}$, average error $< 0.1\ \mu\text{mol mol}^{-1}$.
3. **H_2O analyser :** Non-dispersive infrared gas analyzer; Range: $0\text{-}75\ \text{mmol mol}^{-1}$; Accuracy: maximum deviation of $\pm 1.0\ \text{mmol mol}^{-1}$ in the operation range; Precision : peak to peak (4 second averaging) at $0\text{-}75\ \mu\text{mol mol}^{-1}$ should not be more than $0.03\ \mu\text{mol mol}^{-1}$, average error $< 0.01\ \mu\text{mol mol}^{-1}$
4. **PAR sensor :** Range: $0\text{ to }3000\ \mu\text{mol m}^{-2}\text{ s}^{-1}$, precision $< 10\ \mu\text{mol m}^{-2}\text{ s}^{-1}$, Resolution $< 1\ \mu\text{mol m}^{-2}\text{ s}^{-1}$
5. **Temperature control :** Operating temperature range should be $0\text{-}50\ ^\circ\text{C}$ or more, Temperature control should be within $4\text{ - }6\ ^\circ\text{C}$ of ambient temperature, Control range $0\text{ to }50\ ^\circ\text{C}$
6. **CO_2 control:** The system should be supplied with CO_2 injector system for variable CO_2 supply in leaf cuvette.
7. **Power supply:** Integrated power supply recharger with four rechargeable batteries for long duration operation of equipment along with the charger.
8. **Manual and accessories:** Printed manual, software and CD/DVD/data system for the operation of the equipment. Necessary consumable accessories like gaskets for leaf chamber, desiccants and scrubber for three years duration should be supplied along with the equipment. Spares kit and carrying case to be provided.
9. **Optional Accessories :** Soil CO_2 flux chamber for measuring Soil respiration/ CO_2 flux and Chlorophyll fluorescence system for simultaneous measurement of chlorophyll fluorescence and gas exchange on the same leaf area. It should accurately measure multiphase flash fluorescence from a single fluorescence and gas exchange simultaneously.

Three year warranty for the equipment with AMC rates for at least five years after the lapse of warranty period need to be shown. Working of the equipment needs to be demonstrated with thorough training for operation.

NOTE: ORIGINAL PRINTED CATALOGUE/LEAFLETS IS TO BE ENCLOSED ALONG WITH THE TENDER FOR THE ABOVE ITEM. THE SERIAL NO. OF THE ABOVE MENTIONED SPECIFICATION MIGHT BE INDICATED/ UNDERLINED/ HIGHLIGHTED WHERE THE ABOVE POINTS ARE MEETING/ MATCHING OR OTHERWISE.

ITEM NO.	NAME OF THE ITEM	Qty.	EMD Amount (Rs.)
02	Open Top Chambers with control and automation	Given below	120000/-

Specifications

Sl. No.	Specification	Quantity
Open Top Chambers (OTC)	Each chamber should have working area of 16 m ² , with preferred size dimension of 4 × 4 m and height of minimum 3.0 m with strong foundation and gasket fitted doors (opening outside). The chamber to be constructed with 4-5 mm thick multilayered UV protected polycarbonate sheets, tightly fixed, providing at least 85-90% light transmission. Each chamber to be provided with NDIR based microprocessor controlled CO ₂ sensor to monitor the CO ₂ concentration. Should have weather grade sensors for monitoring of air and canopy temperature (range : 0-60 °C, accuracy: 0.2 °C), soil temperature (range : 0-60 °C, accuracy : 0.2 °C, depth up to 60 cm at 10 cm interval), humidity (0-100% range), PAR sensor (silicon photodiode sensors with range of 0-3000 μmol/m ² /s, precision 10 μmol), and soil moisture sensor (range : 0-70% (v/v), at least 0.5% accuracy, probe depth at least up to 100 cm at minimum 5 cm interval). Parameter sensors (CO ₂ , temperature, PAR, humidity, soil moisture, soil temperature) one each required for reference plot. Online data logging (8 channel) on real time basis to be provided through PC	08
Specific facility : elevated CO ₂ chambers	In addition to the OTC specifications, Multiple CO ₂ release points/nozzles with adjustable height provision. Each chamber to be provided with CO ₂ sensor to monitor and regulate the CO ₂ concentration up to at least 1000 ppmv level. Sonic nozzles and microprocessor controlled CO ₂ sensor with external suction pump (with power ON-OFF switch), automated CO ₂ manifold system (copper made), built in membrane filter, panel mounted mass flow meter for sample gas flow measurement and having moisture removal mechanism with accuracy of ± 1.5%	02 (out of the 08 chambers)
Specific facility : Temperature elevated chambers	In addition to the OTC specifications, to be fitted with ceramic infrared heaters with controller for ambient air temperature elevation up to 4 °C, having provision for adjustable height above crop canopy up to minimum of 3.0 m.	02 (out of the 08 chambers)
Specific facility : CO ₂ enriched and temperature elevated chambers	In addition to the OTC specifications, to be fitted with ceramic infrared heaters for ambient air temperature elevation up to 4 °C, having provision for adjustable height above crop canopy up to minimum of 3.0 m. Multiple CO ₂ release points/nozzles with adjustable height provision. Each chamber to be provided with CO ₂ sensor to monitor and regulate the CO ₂ concentration up to at least 1000 ppmv level. Sonic nozzles and microprocessor Controlled CO ₂ sensor with external suction pump (with power ON-OFF switch), automated CO ₂ manifold system (copper made), built in membrane filter, panel mounted mass flow meter for sample gas flow measurement and having moisture removal mechanism with accuracy of ± 1.5%	02 (out of the 08 chambers)
Accessories	Required accessories may be quoted for the need up to at least three years	

Monitoring and Control Facilities	Each chamber to have independent monitoring / regulating facilities for CO ₂ through NDIR based microprocessor controlled infrared gas analyzer, and for other parameters on real time basis. To be monitored through a control panel having IRGA and supervisory control and data acquisition system (SCADA) hardware and licensed software. Field Mountable Prefab structure of appropriate size including internal electrical cabling with 1.5 Ton Window Air Conditioner to accommodate control panel and other accessories.	01 (control panel)
Gas cylinders	CO ₂ gas cylinders (47 lts. Capacity, duly filled) having all the required certificates, two stage CO ₂ regulator with heater	08
Back up for Power supply	3 KVA UPS system with 1 hour back up to provide back up to SCADA system and field sensors	
Installation and warranty	The required control and automation equipments need to be installed and commissioned at the IISS research farm, functioning to be demonstrated. Minimum three years warranty for the equipments and for the entire system. The AMC rates may be quoted for at least five years after expiry of warranty period.	
NOTE: ORIGINAL PRINTED CATALOGUE/LEAFLETS IS TO BE ENCLOSED ALONG WITH THE TENDER FOR THE ABOVE ITEM. THE SERIAL NO. OF THE ABOVE MENTIONED SPECIFICATION MIGHT BE INDICATED/ UNDERLINED/ HIGHLIGHTED WHERE THE ABOVE POINTS ARE MEETING/ MATCHING OR OTHERWISE.		

Name & Specification of the equipments.

ITEM NO.	NAME OF THE ITEM	Qty.	EMD Amount (Rs.)
(03)	Soil Moisture meter with accessories	01	30000/-

Specification

<p>Specifications for soil moisture meter with accessories:</p> <p>Soil moisture measurement system for recording soil moisture data in the field using the advanced and accurate Time/Frequency Domain Reflectometry technology. Soil moisture meter should be with following specifications:</p> <ul style="list-style-type: none"> • Measurement range:0-50% volumetric moisture content • Measurement accuracy: Not more than $\pm 2\%$ (V/V) • Reading accuracy : $\leq 0.1\%$ (V/V) • Measurement depth: min 100 cm or more in soil profile. • Measurement suitability: For all types of soils in field condition. It should be able to measure soil moisture content at various soil depths simultaneously. • Measurement output: Both digital and graphical output on field data of numerous measurements. • Instrument should have datalogger/handheld PC for storing at least 10000 data sets. • System should be supplied with battery, connector and charging equipment and should be portable and provided with convenient carrying case. • Battery on each recharge should be able to measure at least 200 measurements continuously or 8 hours uninterrupted working in field. • With complete accessories namely access tubes (100 nos), other relevant accessories, software for calibration and data transfer, auger kit for placing the access tubes in the soil required for successful installation and working of the equipment. • The firm should quote rate of AMC at least for 5 years after the expiry of warranty period. <p><u>NOTE:</u> ORIGINAL PRINTED CATALOGUE/LEAFLETS IS TO BE ENCLOSED ALONG WITH THE TENDER FOR THE ABOVE ITEM. THE SERIAL NO. OF THE ABOVE MENTIONED SPECIFICATION MIGHT BE INDICATED/ UNDERLINED/ HIGHLIGHTED WHERE THE ABOVE POINTS ARE MEETING/ MATCHING OR OTHERWISE.</p>
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Name & Specification of the equipments.

ITEM NO.	NAME OF THE ITEM	Qty.	EMD Amount Rs.
(04)	High Energy Ball Mill	01	100000/-

Specification of High Energy Ball Mill

1. High energy ball mill (high drive performance minimum 2000W (VA) based on principle of planetary ball mill with 4 grinding stations with jars made of zirconium oxide for grinding without contamination to produce nano particle (1-100nm).
2. The instrument has to be usable for wet grinding in a colloidal form to final produce less than 100 nm size particle.
3. It has to be suitable for pulverization and mixing of all kinds of materials (soft to extremely hard) to the fineness desired above.
4. Centrifugal forces (>20 g) with very high pulverization energies and short grinding times.
5. Variable and controllable speed range from 50 – 400 rpm.
6. Suitable grinding jars (≥ 500 m.)
7. Quick-action clamping devices with self-acting lock
8. Facility for direct and indirect measurement of energy input.
9. Safety mechanism consisting of stainless steel protective jacket for safe operation
10. Digital controller for continuous speed adjustment, time of operation, real time display (preferably with touch pad key panel) and also should have digital grinding time setting
11. Machine should have unsupervised long-term grinding facility
12. User-friendly gripping flanges on jar and lid
13. Feed size should be ≤ 1 mm.
14. Speed of the jars ≥ 1000 rpm with effective sun wheel diameter at least 250 mm
15. Noise level value < 90db
16. Requirement of zirconium balls (5,4,2 mm diameter as per the requirement of the size of the jar 2 – 3 kg each) to achieve the particle size of nano level (< 100 nm) should be quoted.
17. Compatible and necessary accessories may be quoted at least for 5 years of use.
18. All the necessary accessories for installation and smooth operation of the instrument should be quoted.
19. At least 2 year warranty followed by 5 year AMC should be quoted.
20. Also mention the space requirement, power and environment requirement.
21. Installation, demonstration and training (7 days) to the staff for proper operation of the instrument.

NOTE: ORIGINAL PRINTED CATALOGUE/LEAFLETS IS TO BE ENCLOSED ALONG WITH THE TENDER FOR THE ABOVE ITEM. THE SERIAL NO. OF THE ABOVE MENTIONED SPECIFICATION MIGHT BE INDICATED/ UNDERLINED/ HIGHLIGHTED WHERE THE ABOVE POINTS ARE MEETING/ MATCHING OR OTHERWISE.

Name & Specification of the equipment.

ITEM NO.	NAME OF THE ITEM	QTY.	EMD Amount (Rs.)
05	SOIL WATER PERMEAMETER	01 nos.	20000/-

Specifications

Sl. No.	Specifications
1	<p><u>SPECIFICATION FOR SOIL WATER PERMEAMETER</u></p> <p>The soil water permeameter along with all accessories for measuring the saturated soil water permeability of undisturbed soil core samples in sample rings. The measurement is to be made in the laboratory conditions. The permeameter should simultaneously measure saturated permeability of minimum 10 undisturbed soil core samples.</p> <p>Facilities for both falling head and constant head method of measuring saturated hydraulic conductivity should be available.</p> <p>The permeameter should be supplied with soil sample ring kit consisting of 40 Stainless steel cores of diameter 100 mm (ID) or slightly greater and height minimum 100 mm (40 nos.) Soil auger for extracting undisturbed soil samples in core to a depth of 1.0 meter soil along with hammer and other accessories for extracting soil.</p> <p>System should have water regulator. System should have re-use water using circulation pump. System should have measuring devices. Aluminium case to carry at least 20 cores to field.</p>

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Name & Specification of the equipments.

ITEM NO.	NAME OF THE ITEM	QTY	EMD Amount (Rs.)
06	Digestion chamber with scrubber	01 nos.	20000/-

Specifications

Sl. No.	Specifications
1	<p>Specification for digestion chamber with Scrubber</p> <ul style="list-style-type: none"> • Size should be at least width 1.5 m height 2.4m depth 0.79m with single sash. • Hood should be of fiberglass liner, and pre-set baffle(s) with flame spread single molded will be preferred. • Hood should have by-pass airflow design, clean sweep airflow opening. • Horizontal and vertical fascias at 45 degree angled to increase air flow efficiency. • Exterior body of hood should be Glacier white, dry powder epoxy-coated steel exterior. • Hood should have thick tempered safety glass vertical-rising sash. • Hood should have at least 2 service fixtures and two electrical duplex receptacles having suitable ampere ratings. • Hood should have dished epoxy worktop to contain the accidental spillage of chemical. • Hood should have removable front and side panels and front access panels for access to plumbing and electrical wiring. • Vender should quote dry power coated steel base cabinet. • System should be complete in all the terms to start work. • Hood should be compatible to use digestion unit and should be able to move the entire fume outside of hood as per international rule. • Hood should comply the following standard – SEFA 1-2006, NFPA 45-2004, ASTM E84-09C, ASHRAE 110-95, and ANSI Z9.5-2003 and should be CE marked. • Hood should have vapor proof fluorescent light.
	<ul style="list-style-type: none"> • Vender should quote FRP ducting and PTFE coated remote blower to make unit complete and ready to work. • System should be validated at site during installation. • Power supply: 230V AC ± 10% 50 Hz <p>Scrubber</p> <ul style="list-style-type: none"> • The scrubber should be mountable /compatible with the above mentioned dimension of digestion chamber/ fume hood. • It should also be resistant to long term chemical abrasion, weathering and withstand high temperature. • It should be compact, designed to absorb obnoxious toxic gases and vapours immediately as they are formed. • It should absorb wide range of acids and alkalies, and should also be effective in removing dust and aerosol particles. • The system should meet the national and international safety standards. <p>Note</p> <ul style="list-style-type: none"> • Requirement of space, electrical and water points etc should also be indicated. <p>All accessories should be quoted for installation, operation and maintenance of the instrument.</p>

NOTE: ORIGINAL PRINTED CATALOGUE/LEAFLETS IS TO BE ENCLOSED ALONG WITH THE TENDER FOR THE ABOVE ITEM. THE SERIAL NO. OF THE ABOVE MENTIONED SPECIFICATION MIGHT BE INDICATED/ UNDERLINED/ HIGHLIGHTED WHERE THE ABOVE POINTS ARE MEETING/ MATCHING OR OTHERWISE.

PROFORMA FOR REFUND OF EMD
(To be submitted on the letter head of the firm submitting tender)

To,

The Director,
Indian Institute of Soil Science
Nabibagh, Berasia Road,
Bhopal – 462 038.

Sub: Request for refund of EMD against Tender No. **5-392/2015-16/P&S/IISS due on 30.10.2015.**
Sir,

I request you that the EMD deposited by me against tender No. **5-392/2015-16/P&S/IISS due on 30.10.2015** quoted for the items as per details given below may kindly be refunded.

Sl.No.	Item No.	Name of the equipment	DD No. & date	Amount

Yours faithfully,

Signature

PRE-RECEIPT

Received Rs. (Rupees
.....only) from Director, Indian Institute of Soil Science against
refund of EMD deposited against **tender No. 5-392/2015-16/P&S/IISS due on 30.10.2015 for (Name
& No. of item).**

(SIGNATURE)

With affixing Rs.1/- revenue stamp

Schedule of Requirements

Sl. No.	Brief description of goods	Quantity	Delivery Schedule

Amount of Bid Security:

No. _____ dated _____ for Rs. _____. The firms name may be given on the reverse of DD.

Name of the Bank _____

TECHNICAL SPECIFICATION :-

QUESTIONNAIRE

BIDDERS SHOULD FURNISH SPECIFIC ANSWERS TO ALL THE QUESTIONS GIVEN BELOW IN CASE A QUESTION DOES NOT APPLY TO A BIDDER THE SAME SHOULD BE ANSWERED WITH THE REMARK "NOT APPLICABLE" BIDDERS MAY PLEASE NOTE THAT IF THE ANSWERS SO FURNISHED ARE NOT CLEAR AND/OR ARE EVASIVE, THE BID WILL BE LIABLE TO BE IGNORED.

1. Bid No. Date for bid opening on

2. Offer is open for acceptancedays

3. Brand of goods offered:

4. Name & address of manufacturer :

5. Station of Manufacture :

6. What is your permanent Income Tax A/C no :

7. Confirm whether you have attached your latest/current ITCC or certified photocopy thereof.

8. Status:

(a) Are you currently registered with the Directorate General of Supplies & Disposals

(DGS&D) for the item(s) quoted? If so, indicate the date up to which you are registered and whether there is any monetary limit on your registration.

(b) Are you a small scale unit currently registered with the National Small Industries Corporation (NSIC) under Single Point Registration Scheme for the item(S) quoted? If so, indicate the date up to which you are registered and whether there is any monetary limit on your registration

(c) If you are not registered either with NSIC or DGS&D, please state whether you are currently registered with Directorate of Industries of the State Government concerned. If so, indicate the date up to which you are registered and whether there is any monetary limit on your registration.

(d) Are you registered under the Indian Companies Act, 1956 or any other Act?

Please attach certified copy (copies) of the relevant registration certificate(s)
in confirmation to your above answer(s).

9. Please indicate:-

Name & full address of your Banker(s): -----
Bank account No. for e-payment

10. Whether you are:

(i) Manufacturer of the goods quoted; or -----

(ii) Manufacturer's authorized agent for those goods.-----

11. State whether business dealings with you have been currently banned by any
Ministry/Deptt. of Central Govt. or any State Govt.

Signature of Witness
Name & address of Witness

Signature of Bidder
Full name, designation &
Address of the person signing above
For and on behalf of Mssrs.
.....
(Name and address of the bidding firm)

BID FORM AND PRICE SCHEDULES

Date

To,

**The Director,
INDIAN INSTITUTE OS SOIL SCIENCE
NABIBAGH, BERASIA ROAD, BHOPAL- 462038**

Ref: Your bidding documents No. dated

Having examined the above mentioned bidding documents, including addenda Nos..... (if any), the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver..... (description of goods and services) in conformity with the said bidding documents for the sum as shown in the price schedules, attached herewith and made part of this bid.

We undertake, if our bid is accepted, to deliver the goods and complete the services in accordance with the delivery schedule specified in the Schedule of Requirements after fulfilling all the applicable requirements incorporated in the above referred bidding documents.

If our bid is accepted, we will provide you with performance security as per terms and condition of tender for a sum equivalent to 10 % (ten percent) of the contract price for the due performance of the contract.

We agree to abide by this bid for the bid validity period or for the subsequently extended period. If any, agreed to by us and it shall remain binding up on us and may be accepted at any time before the expiration of that period.

Until a format contract is prepared and executed, this bid together with your written acceptance thereof and your notification of award, shall constitute a binding contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

Dated this Day of 200

**Signature
(in the capacity of)
Duly authorized to sign bid for and on behalf of**

MANUFACTURER'S AUTHORISATION FORM

To,

**The Director
IISS, BHOPAL**

(Name and address of the purchaser)

Dear Sirs,

Ref: Your Bidding Documents No.

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 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 terms and 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 on 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.

PRICE SCHEDULE FOR DOMESTIC GOODS OR GOODS OF FOREIGN ORIGIN LOCATED WITHIN INDIA

1	2	3	4 Price per unit						5	6	7
Item No.	Item description no.	Quantity	Ex-factory/ ex-warehouse use/ ex-showroom off the shelf	Excise duty if any	Packing and forwarding	In-land transportation	Insurance other duties and taxes, if any other (than sales tax) and incident at costs	Incidental services (Including supervision)	Overall unit price [a+b+c+d+e+f]	Total price	Sale tax payable, if contract is awarded.
			(a)	(b)	(c)	(d)	(e)	(f)	3x5		

Total bid price in Rupees: (in figure) _____
 (in words) _____

AMC charges for 1st year _____
 IInd year _____
 IIIrd year _____
 IVth year _____
 Vth year _____

**Place
Date**

**Signature of bidder
Name
Business**

Note:

- I. In case of discrepancy between unit price and total price, the unit price shall prevail.

PRICE SCHEDULE FOR GOODS TO BE IMPORTED FROM ABROAD

1	2	3	4	5				6	7	8	9	10
Item No.	Item description no.	Country of origin	Quantity	Unit price FOB port of loading	Unit price CIF at port of entry	Inland transportation charges, insurance and other local costs incidental to delivery, if specified	Incidental services including supervision	Overall unit price [a+b+c]	Total price	Indian agent's name	Indian agent's commission as a% of FOB price included in the quoted price	Shipment weight and volume
				(a)	(b)	(c)	(d)	4x6				

Total bid price in foreign currency : (in figure) _____
 (in words) _____

AMC charges for 1st year _____
 IInd year _____
 IIIrd year _____
 IVth year _____
 Vth year _____

Place
Date

Signature of bidder
Name
Business

Note:

I. In case of discrepancy between unit price and total price, the unit price shall prevail.

