NOTICE INVITING E-TENDER FOR SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF HEAT PUMP ALONG WITH STORAGE TANK FOR HOSTEL NO. 01 to 8, 11, 12 & FPM I & II AT IIM, LUCKNOW.

To,

M/S._____

_____

_____

SUB.: Notice inviting E-Tender for Supply, Installation, Testing & Commissioning of Heat Pump along with storage tank for hostel no. 01 to 8, 11, 12 & FPM I & II at IIM, Lucknow.

Dear Sir,

This is in reference to the advertisement published on central procurement portal i.e. www.eprocure.gov.in for Supply, Installation, Testing & Commissioning of Heat Pump along with storage tank for hostel no. 01 to 8, 11, 12 & FPM I & II at IIM Lucknow, Prabandh Nagar, Lucknow.

Tenders are invited, on behalf of the Director, Indian Institute of Management, Lucknow for Supply, Installation, Testing & Commissioning of Heat Pump along with storage tank for hostel no. 01 to 8, 11, 12 & FPM I & II at IIM Lucknow, Prabandh Nagar, Lucknow as per details attached. The Institute invites you to participate and to send your offers as per the attached **NOTICE** inviting **E-TENDER**.

E-Tenders are invited under two bid system (both Technical and Financial) from reputed parties. The complete Tender document containing General term and Conditions, pre-qualification requirements etc. are available on http://eprocure.gov.inprocure/app and our website http://www.iiml.ac.in for reference only. Tenderer has to pay an amount of Rs. 1500.00 (Rupees Fifteen Hundred) in form of Demand Draft in favour of Indian Institute of Management, Lucknow as a cost of the tender document. This amount is Non-refundable.

Reputed firms/Service providers may submit their bids in the prescribed format with all the necessary documents online at http://eprocure.gov.inprocure/app on or before bid submission closing Date & Time

Sd/-
Chief Administrative Officer
For Indian Institute of Management

INDIAN INSTITUTE OF MANAGEMENT LUCKNOW
Prabandh Nagar, Off Sitapur Road
Lucknow 226013

E-TENDER NOTICE INVITING TENDER
IIML/PROJ/TENDER/2020-21/4301 Date: 28/06/2021

NOTICE INVITING E-TENDER FOR SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF HEAT PUMP ALONG WITH STORAGE TANK FOR HOSTEL NO. 01 TO 8, 11, 12 & FPM I & II AT IIM, LUCKNOW.

Dear Sir,

E-Tenders are invited from reputed manufacturer/Authorized Dealer for Supply, Installation, Testing & Commissioning of Heat Pump along with storage tank for hostel no. 01 to 8, 11, 12 & FPM I & II to submit their tender to quote your minimum rates on enclosed bill of quantity on behalf of Director, IIM Lucknow. The general terms & conditions of service contract are also enclosed which has to be duly signed indicating acceptance by the tenderer.

Name of work	:	Supply, Installation, Testing & Commissioning of Heat Pump along with storage tank for hostel no. 01 to 8, 11, 12 & FPM I & II at IIM, Lucknow
Earnest Money	:	Rs. 1,45,000/- (Rupees One Lakh Forty five Thousand Only)
Total Estimated Cost	:	Rs. 72,28,840/- (Inclusive of GST)
Period of Contract	:	90 Days
Date of issue of tender document	:	29.06.2021
Date Pre-Bid Meeting	:	09.07.2021 at 11.00 AM
Late Date for submission tender document	:	20.07.2021 upto 3:30PM
Date of opening of Technical Bid Opening	:	21.07.2021 at 03:35 PM
Date of opening of Financial Bid Opening		Will be intimated later.
Starting of work	:	Within 10 days of the Date of LOI

Tenderer are advice to visit the site and see the work before submitting the tender. **The Technical and Financial bids should be uploaded separately through E-tendering process only before the due date & time.**

Sd/ -
Chief Administrative Officer
For Indian Institute of Management
Lucknow

ANNEXURE-1

INSTRUCTION TO TENDERER

(i) The Tenderer shall read the document carefully before filling it.

(ii) Bidders are required to deposit an amount of Rs. 1,45,000/- (Rupees One lakh Forty Five Thousand only) towards Earnest Money Deposit (EMD) to below mentioned bank account of Institute on or before the last date & time mentioned above. EMD through any other form will not be accepted. UTR number / Transaction ID and date of Deposit/Transfer of EMD shall be mentioned in Technical Bid at appropriate place. Those who are exempted from deposit of EMD shall upload the valid certificate in this regard. Bank

Account No.	07231450000294
Bank IFSC Code	HDFC0000723
Name of Bank & Type of Account	HDFC BANK/Saving

(iii) Financial bid must be submitted as per the formats provided at the CPP portal for this tender.

(iv) Tender must be valid for a minimum period of 120 days from the date of opening.

(v) The tender should be submitted only latest by last date and time mentioned above.

(vi) Technical offers shall be opened first, if the tenderer fail to upload the EMD/Tender Fee/MSME Certificate/document before last date of submission of tender than their technical offer will not be Opened/Evaluated. The technical offers will be evaluated by the selection committee based on technical evaluation criteria as per **Annexure-3** of this document. The Financial offers from technically unqualified tenderers as per evaluation criteria will not be opened.

(vii) Financial offer shall be Filled/Upload in the standard format provided at CPP portal for this tender. Price/Rate shall not be quoted anywhere in technical Bid. If filled in rates etc. found with technical bid then the bid will be straight away rejected. Financial offer opened only for those tenders who are technically qualified as per evaluation criteria given in this tender document.

(viii) The dates for opening financial offer will be communicated to the tenderers and tenderers are requested to be present at the time of opening the tenders. Authority letter is must if any person other than who has signed the tender document attends such event.

(ix) Each page of the tender document must signed by the authorized signatory of the tenderer.

(x) Original tender document duly signed and filled up should be uploaded. No document will be accepted through post/register post/courier etc. If any document receive from tenderer will be automatically disqualified in technical.

(xi) Tenderer as advised to Visit the Site and understand the type and quantum of works and specifications and acquaint themselves fully about the works to be carried out and all other factors governing the works before quoting his rate. If they have any query they may clarify before 11.00 AM of last date of tender submission. No query will be entertained after that.

(xii) The tender not accompanied by complete document or duly filled in all respect shall be rejected.

(xiii) All erasures, cuttings and alterations made must be attested by the authorized person while filling the tender document. Over-writing of figures is not permitted.

(xiv) Tenderers must also check the Buy Back old Solar Hot water plant at Site before quoting the Rates. Justification can be asked if filled rate seem unrealistic.

(xv) Tenderer has to submit Performance Security deposit 5% of total contract value within 5 days after issue of LOI with minimum validity of One year in form of DD/FDR from Nationalized Bank. EMD of unsuccessful tenderer shall be returned after finalization of contract. EMD of successful tenderer shall be returned only after deposit of Performance Security deposit. Performance Security deposit will be release after 12 months of successful completion of work. No interest shall be paid on amount.

(xvi) The rate quoted by the tenderer shall be the total sum of material, labour, inclusive of any applicable Octroi tax like entry tax etc. at the IIM Lucknow campus, Lucknow Excluding of GST, GST will be paid extra as applicable.

(xvii) If any discrepancy / misprint is noticed / specification or BOQ, it should be clarified from the Institute before quoting the rate.

(xviii) Following procedures shall be adopted in case of difference in quoted rates in figures and words and extensions:

a. Where there is difference between rates in figures and the rates, quoted in words shall be considered as correct.
b. Where the amount of an item is not worked out or it does not correspond to the rate either in figure or in words, the rates quoted in words shall be considered as correct and necessary extension made.
c. Where the rate quoted by the tenderer in figures and in words tally, but the amount is not worked out correctly, the rates quoted by the tenderer shall be considered as correct and amount shall be corrected accordingly.

(xix) The Indian Institute of Management, Lucknow do not bind themselves to accept the lowest or any other tender and reserve the right to accept or reject any or all the tenders either in full or in part without assigning any reason.

(xx) The tender shall be opened & evaluated by the tender committee and the successful tenderer shall be informed.

(xxi) If any of the document submitted by the tenderer is found fake, even after the acceptance of tender, the contract will be terminated for which the concerned tenderer will itself be responsible and no compensation, etc., will be paid by the IIM, Lucknow.

(xxii) The Director, Indian Institute of Management, Lucknow has reserves the right to reject one or all the tenders without assigning any reason. No claim, whatsoever, shall be entertained on this account.

(xxiii) 5% of the payable bill value will be retained from each bill as defect liability period & shall be released on the satisfactory completion of the job after the defect liability period of 60 (Sixty) months. No interest shall be paid on amount.

(xxiv) Tenderer are required to execute the agreement in accordance with the approved Proforma on non-judicial Rs. 100 stamp paper of appropriate value within 7 days from the date of receipt of this Letter of Intent. The cost of non-judicial stamp paper is to be borne by tenderer.

(xxv) Relaxation will be given as per Govt. norms for NSIC/MSME registered firm for tender fee and EMD only

(xxvi) Successful tenderer uploaded document will be verified with the original at the time of LOI / Agreement.

(xxvii) Minimum warranty of complete machine should be 5 years.

(xxviii) Tenderer should submit Signatory Authority Letter in case tender document not signed by owner.

(xxix) Tender term & condition also includes GCC which is uploaded on IIML website and shall be the part of this contract and its terms and conditions shall be biding to both IML and the successful Tenderer. So please read it properly.

(xxx) The existing Solar water heating system along with accessories which is required to be taken back by the Successful Tenderer under Buy Back condition of this Tender were Installed almost 20 years back.

ANNEXURE-2

SCOPE OF WORK

The scope of work includes design, supply, installation, commissioning, testing of **Hot Water Heating System** at various sites in IIM Lucknow, Lucknow Campus as per the BOQ including required electrical wiring and external pipe Lines (HOT WATER) to give the system on turn – key basis, as per the following specifications.

Following work shall have to be carried out by the contractor in the prices / rates offered by him:

A. All the work related to the proper installation and functioning of the systems shall have to be carried out by the contractor. Transportation, loading, unloading, safety and security of the supplied material, issuance of road permit, way bill etc. shall be the sole responsibility of the contractor.

B. Civil work / welding work related to the foundation of mounting structure of the system shall be done by the contractor.

C. The contractor shall have to provide hot water pipe lines of appropriate size as per requirement/ Plumbing calculations and as required by the user.

D. The contractor shall have to connect the Hot water heating system to the source of cold water available in the building and lay the required cold water pipe line of appropriate size as per requirement and as required by the user. Connection of each Heat Pump system with main electric Supply Panel installed at Ground floor of Each Hostel.

E. The contractor will be responsible for satisfactory performance operation and regular maintenance of the system from the date of commissioning. All the necessary arrangements required in this regards during period shall be made by the contractor.

G. After completion of the proposed work, clearances of all temporary work / materials shall be the sole responsibility of the contractor and this shall be removed immediately after the requirement of such temporary work is completed.

I. All the non-functional part /materials/ items/ replaced during the Guarantee period shall be the property of the contractor.

J. After proper installation, the commissioning of the system shall be carried out by contractor in presence of concerned officer, and user and accordingly joint commissioning/ handing over report shall be signed on prescribed format.

K. The contractor will be responsible for Dismantling the existing old Solar Hot water plant complete, Collecting Down its components and accessories from the Terrace at one place, Loading, Transporting and unloading etc. whatever required for return of existing Solar water heating system under buyback condition. All the non-useable dismantled items/ wastage/scrap/dismantled items not returned by the supplier under buy back shall be disposed of to the desired location as instructed by the Engineer in charge. It should be carried in a way that no damage cause to the existing property/ other contractors/ workers/ students.

L. Tenderers are encouraged to perform due diligence and inform themselves fully about the scope of work.

ANNEXURE-3

TECHNICAL EVALUATION CRITERIA

The technical offer submitted by the bidders will be evaluated based on the below credential criteria.

The Technical Bid should contain the followings documents: -

a) Photocopy of GST Number
b) Photocopy of PAN Card
c) Prospective vendors shall have well experienced in similar type of works with Central/State/PSU/Govt./reputed Private Organization. Photocopy of Experience Certificate of similar field of the firm of during the last three years, ending 31st March of the previous financial year.
d) Experience of having successfully completed works during the last three years, ending 31st March of 2020.

Three similar completed works, each costing not less than the amount equal to 40% of estimated cost of tender each year,

Or

Two similar completed works, each costing not less than the amount equal to 60% of the estimated cost of tender each year,

Or

One similar completed work of aggregate cost not less than the amount equal to 80% of the estimated cost of tender each year.

e) Photocopy of certificate issued by CA for Average Annual Turnover during last 03 years ending 31st march of the previous financial years (31.03.2020) should be at least 30% of the estimated cost.
f) An EMD amounting to Rs. 1,45,000/- (Rupees One Lakh Forty-five Thousand only) drawn in favor of Indian Institute of Management, Lucknow or valid MSME Certificate which ever applicable.
g) The vendor should have facility of Service of reputed brand and should have authorization Certificate of OEM. (Certificates required).
h) The company / firm should have its registered / branch office in Lucknow.

D E C L A R A T I O N

1. All the information furnished by me / us here above is correct to the best of my knowledge and belief.
2. I / we have no objection if enquiries are made about the work listed by me / us in the accompanying sheets / Annexures.
3. I / We agree that the decision of Indian Institute of Management Lucknow in selection of contractor will be final and binding to me / us.
4. I / We have read the instructions and I / we understand that if any false information is detected at a later date the tender shall be cancelled at the discretion of the Company and liable for any action, as deem fit by the Indian Institute of Management Lucknow.

SIGNATURE ……

SEAL OF ORGANISATION

ANNEXURE-4

METHOD OF TENDER EVALUATION

Tender will be evaluated in two step i.e. Technical Bid and Financial Bid. Only those firm/vendor who qualified in Technical Bid, their Financial Bid will be opened.

Contract shall be awarded to the firm (s) offering the lowest in overall total i.e. SITC – Buyback (including Dismantling etc.) Price = total. The firm (L-1) will be awarded the work.

TENDER DECLARATION

I/We have read and examined the Notice Inviting tender, Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, & other documents and rules referred to in the conditions of contract and all other contents in the tender document for the work including GCC attached separately or upload on iiml.ac.in.

I/We hereby tender for the execution of the work specified for IIM Lucknow within the time specified, viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing.

I/ We agree to keep the tendered rates valid till 120 days from the date of opening of tender and not to make any modifications in its terms and conditions.

A sum of Rs. …….. is hereby forwarded in Cash/Receipt Treasury Challan/Deposit at call Receipt of a Scheduled Bank/Fixed deposit receipt of scheduled bank/demand draft of a scheduled bank/bank guarantee issued by scheduled bank as earnest money.

OR

I/We had submitted a self-attested copy of valid certificate as a proof of exemption from submission of Earnest money deposit.

If I/we, fail to furnish the prescribed performance guarantee or fail to commence the work within prescribed period I/we agree that the IIM Lucknow or its successors in office shall without prejudice to any other right or remedy be at liberty to forfeit the said earnest money absolutely. Further, if I/we fail of commence work as specified, I/we agree that IIM, Lucknow or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations/ additional/ extra items as may be ordered as per the provisions in the Contract.

Further, I/We agree that in case of forfeiture of earnest money or both Earnest Money & Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/ have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for tendering in IIM, Lucknow in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

I/We hereby declare that I/we shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information derived therefrom to any person other than a person to whom I/we am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated: Signature of contractor with seal

S.No.	Particulars	Credential Criteria of Firm
1	Name of the firm & Address	
2	Contact No. and Email-ID	
3	GST Registration No. of the firm/Agency (Enclose copy) :	
4	PAN No.	
5	Experience of the firm in similar field during the last three years, ending 31st March of 2020 of providing such services.	
6	Average Annual Turnover during last 03 years ending 31st march of the previous financial year 2020 (i.e FY 2017-18, 2018-19, 2019-20) should be at least 30% of the estimated cost. (Copy of Annual Audited Accounts Statement for each year or the certificate for the average Turnover if the Tenderer issued by registered Charted Accountant) .	
7	Name of Brand of Authorized Service provider in Lucknow.	
8	Details of Original Equipment Manufacturer (OEM) which has Authorized the Tenderer for Supply, Erect, Install and Commission their Heat Pumps. Valid Authorization Certificate to be enclosed.	
9	Address of registered / branch office of tenderer in Lucknow	
10	Details of EMD uploaded or MSME registration no. and year	

ANNEXURE-5

DEFINITIONS

In this Contract, the following words and expressions shall have the meanings as stated below:

(i) **'IIM'** shall mean Indian Institute of Management, IIM Road, Lucknow and shall include their successors and assigns, as well as their authorized representatives.

(ii) **ENGINEER-IN-CHARGE** shall mean the engineer appointed by the IIM to supervise all activities of the project.

(iii) **'TENDERER'** shall mean the company / agency who quote against the tender enquiry for undertaking the work.

(iv) **'CONTRACTOR'** shall mean the successful tenderer whose tender has been accepted by the IIM and to whom the order is placed by the IIM and shall include his heirs, legal representatives, successors etc.

(v) **'PERMANENT WORKS'** shall mean all the works included in the schedule of quantities and shall also include additions, alterations etc. communicated in writing.

(vi) **'SITE',** shall mean the all place i.e. IIM, Lucknow where the project is to be executed.

(vii) **'PROJECT'** shall mean entire work specified in the contract documents inclusive of extra items/extra quantities (if any) executed during the contract period.

(viii) **'ACCEPTANCE LETTER',** shall mean written consent by a letter of IIM to the tenderer intimating him that his tender has been accepted.

(ix) **'CONTRACT'** shall mean the articles of Contract Agreement. The conditions of contract, schedule of quantities, specifications, attached and duly signed by the IIM and the Contractor.

(x) **'DATE OF CONTRACT'** shall mean the date on which the IIM has issued acceptance letter.

(xi) **'CONTRACT PERIOD'** shall mean the period (including rainy season) specified in the tender documents during which the contract shall be executed.

(xii) **'COMPLETION CERTIFICATE'** shall mean the certificate issued by the IIM to the contractor after successful completion of the project. This certificate will be issued on the basis of consultant's certificate to IIM about the completion of the job.

(xiii) **'EXTRA ITEMS'** are those items, which are not appearing in the BOQ but are required to be executed during the project period and for which rates are to be derived as per the formula given in the conditions of the contract.

(xiv) **'EMD'** shall mean Earnest Money Deposit. The Owner takes this amount to check the earnestness/seriousness of the tenderers in case they are selected as winners. The EMD amount the tenderer has to pay along with the bid response. It is one of the most important document/instrument which a tenderer is supposed to submit along with other documents.

ANNEXURE-6

GENERAL CONDITIONS OF THE CONTRACT

General conditions of the Contract are available at the IIM Lucknow web site and at Project Division Office. These conditions shall be the part of this contract. The successful Bidder shall be required to submit the signed hard copy of these General Terms and Conditions after issue of LOI and before starting of the work.

SPECIAL CONDITIONS OF CNTRACT.

1.1 Directive to Contractor

1.1.1 Interpretation of Contract Documents:

(i) All the documents forming part of the contract are to be taken as mutually explanatory, supplementary and complementary to each other. If there is any error, omission or discrepancy in any of them, it shall be brought to the notice of the IIM. The decision of the IIM shall be final and binding. The contractor shall execute the work accordingly.

(ii) The contractor shall examine all the contract documents thoroughly including the scope, nature and magnitude of works he has to execute in accordance with the contract documents.

(iii) The contractor shall visit the project site so as to study the site conditions, means of access to the site and other factors governing the works.

1.1.2 Period of Contract:

The time period for completion of job Supply, Installation, Testing & Commissioning of Water Heating System for hostel no. 01 to 08, 11&12, FPM I & II shall be **(03) three month from the date of issue of LOI (Letter of Intent)**

1.1.3 Delay in work execution due to reasons beyond contractor control:

In case the work is hindered by the Department or for any reason / event, for which the Department is responsible, the competent authority of the Institute shall, if justified, give a fair and reasonable extension of time and reschedule the period for completion of work such extension of time or rescheduling of milestone/s shall be without prejudice to any other right or remedy of the parties in contract or in law. The contractor is required to bring to the notice of Engineer In charge in writing the start and end of such Hindrance. The contractor will be required to submit proper delay analysis (indication the Start and End of Such hindrance as per the standard format of CPWD)

1.1.4 No Sub-Contractor Clause:

Contractor will perform the work in accordance with the terms of this Agreement. Contractor will generally not subcontract any other individual or entity or agent, for the work under this Agreement. However, if there is requirement the contractor may sub-contract by written consent of The Director IIM, Lucknow.

1.1.5 Site Order Book (Register):

The site order book duly certified by engineer-in-charge regarding number of pages it contains, each page being numbered, name of work, name of contactor, reference of contract/work order and the aforesaid certificate should be recorded on its page. It shall be maintained on the sites of work and should never be removed there from under any circumstances. It shall be property of IIM Lucknow. The engineer in charge or his

authorized representative shall duly record his observation. The contractor shall promptly sign the site order book and note the orders given therein by the Engineer in charge or his representative and comply with them. The compliance shall be reported by the contractor in writing to EIC in time so that it can be checked.

1.1.6 Default of Contractor:

If the contractor fails to maintain progress and quality of work proportionate to time period allotted for the work in spite of notices or complete the work within the stipulated time period or extended time period, then the IIM shall have the right:

(i) **To determine the contract:** In this event, the contract shall be terminated by giving written notice to the contractor and the unfinished works shall be got completed by labor's engaged by IIM or through other agency at the risk and cost of the contractor.

(ii) **Without determining the contract:** In this event, the remaining works shall be got executed through a fresh contractor in which case the contractor shall not have any objection or claim on this account.

(iii) **Before determining the contract:** In this event, if the IIM finds that the defaults of the contractor can be rectified, then an opportunity shall be given to the same contractor to rectify the defects / defaults in the specified time.

(iv) **Termination of contract for death:** If the contractor is an individual of a proprietary firm and proprietor of the firm dies and if the contractor is Attorney of partnership firm and dies, then the IIM has the right to terminate the contract unless and until the IIM is satisfied that the surviving partners are capable of executing and completing the remaining contract. In case of termination of contract, the legal representatives of the deceased contractor are not entitled for any compensation or claim. Also, the IIM shall not levy any penalty against the damage caused by incomplete work.

(v) **Termination of Contract in part or in full for contractor's default:** If the contractor fails to execute the work in the manner described in the contract documents or if at any time, in the opinion of the IIM:

a. Fails to carry out the works in accordance with the contract conditions or as per the specifications mentioned in the documents.
b. Stops the execution of works without giving prior information to the IIM.
c. Fails to carry out the works to the satisfaction of the IIM Engineer In charge with respect to qualities and time schedule.
d. Fails to supply sufficient or suitable work, materials, and labor's etc.
e. Commits breach of any of the provisions of the contract.
f. Abandons the work.
g. Becomes bankrupt during the continuance of the work. Whenever the employer shall exercise his authority to cancel the contract under the above condition, the employer shall be at liberty to hold and retain in their hands materials, tackles, machinery and stores of all kinds on site as they may think proper and may at any time sell any of the materials, tackle, machinery and stores and apply the proceeds of sale in or towards the satisfaction of any loss which may arise from the cancellation of contract as aforesaid. The employer shall also be at liberty to use materials, tackle, machinery and other stores on the site of contractor as they think proper

in completing the work and the contractor will be allowed the necessary credit. The value of materials and stores and amount of credit to be allowed for tackle and machinery belonging to contractor and used by employer in completing work shall be assessed by the IIM and amount assessed shall be final and binding on the contractor. In case employer completes or decides to complete the work under the provisions of this condition, the cost of completion to be taken into account in determining the excess cost to be charged to the contractor under the condition shall consist of the cost of materials purchased or required to be purchased, labor provided or required to be provided.

1.1.7 Variation in scope of works:

(i) Variation in quantity: The IIM has the right to increase or decrease the quantity of work or delete / add certain items of work in consultation with Engineer in charge. However, such changes shall not entitle the contractor for any compensation, claim regarding the change in scope of work.

1.1.8 Staff and Workers:

The technical staff employed by the contractor shall be responsible for the quality and workmanship of the work as per the satisfaction of the IIM. The contractor's supervisory staff should follow the instructions given by the IIM or his authorized representative. If any of the contractor's staff members is incapable or in-experienced, in the opinion of the IIM, then he should be removed immediately and the contractor should do suitable substitution. If the workers or the supervision staff of the contractor are involved in riotous or illegal activities to such an extent that it becomes necessary to hand over the matter to the police, then the contractor would be solely responsible for the case and all the expenses incurred in the legal proceedings shall be borne by the contractor.

1.1.9 Maintenance of the site

Contractor should keep his working site clean and the materials brought for work shall be kept in a properly stacked/stored way. The work site should be swiped at the end of each day after removal of debris/left over materials at the identified site by IIM. The contractor has to take care so as not to spoil or damage other contractor's / IIMs job / material.

1.1.10 Dispute & Arbitration:

(i) All disputes or differences whatsoever arising between the parties out of or relating to this contract other specifications and quality of work, quality of materials used for the work, construction, meaning and operation or effect of the work or the breach thereof that cannot be settled by good faith and negotiations between the parties within 60 days of the commencement of the negotiation shall be settle by mutually referring the dispute to a sole Arbitrator and the award passed by him shall be final and binding on the parties. Selection of arbitrator shall be made by mutual consent. The cost of arbitration shall be divided equally. The proceedings will be governed by the provisions of the

arbitration & Conciliation Act, 1996. The place of arbitral proceedings will be Lucknow. The language of the arbitral proceedings shall be English

(ii) By consent of Parties the jurisdiction of all other courts are excluded and the courts at Lucknow alone shall have jurisdiction.

(iii) "Abandonment/incomplete work", wherein it should be mentioned that apart from the forfeiture of security the incomplete work shall be got completed from some other agency and the costs thereof be recovered from the contractor.

(iv) The service of notice will be given by e-mail, fax, courier, speed post or registered post be added and the address for service of notice be specified both for IIM and contractor.

1.1.11 Escalation:

The rates quoted by the contractor in the contract documents shall be final and shall not be subjected to any change due to the increase in labor wages or inflation wages or inflation in the cost of materials or any other price variations due to any reason during the stipulated time period of the contract or during the extended time period of completion.

1.2 Execution of Work

1.2.1 General:

All the works shall be executed in accordance with the specifications and instructions approved by the IIM as mentioned in the contract document. Any damage done by the Contractor to the existing structure fittings/fixtures, water proofing, walls plaster etc. during the dismantling or laying/fixing of the complete system shall have to be fixed and repaired by the contractor, at his own cost. In case of failure to do the same, the necessary cost for making/repairing the facility shall be recovered from the final bill of the contractor.

1.2.2 Inspection of works:

(i) The Contractor will submit its Quality Assurance Plan, manufacturer test Certificate of Raw material used for fabrication and Internal inspection reports for quality checks conducted during the manufacturing process etc. for the material being supplied before dispatching the material to site. In case any quality test is required by the engineer in charge then the cost for the same shall be beard by the Contractor.

(ii) The Engineer-in-charge shall have the full authority to inspect the works at any time, at any stage. The contractor shall provide adequate facilities to carry the inspection work. The contractor should present himself or his authorized representative during the inspection so that the IIM can convey the instruction regarding the works.

(iii) The contractor shall give information to the IIM before covering up the works so that the same can be inspected and measured jointly & correctly to true dimensions.

(iv) If the contractor fails to get the work inspected before covering it up, then the IIM has full authority to get the work uncovered at the expense of the contractor and if any fault is found then the contractor should rectify the same without claiming any extra payment.

1.2.3 Inadequate / substandard works and materials:

(i) Material used should be as per the specification stipulated in this Tender document.

(ii) If any material brought by the contractor is found unsuitable or of sub-standard quality after testing, then the contractor shall remove those faulty materials immediately from the site as per the instructions of the IIM.

(iii) If any work executed by the contractor is found to be of bad workmanship, then the same is to be dismantled and re-executed by the contractor without claiming any extra payment or extension in time period.

(iv) If any of all above 3-point repetition found by the contractor, then 0.01% of contract value will be deducted from the bill for each any such repetition.

1.2.4 Default of Contractor in compliance:

If the contractor or his authorized representative fails to follow the instructions given by the IIM regarding any of the works, then the same shall be got executed by other persons employed by the IIM and the expenses incurred shall be done by the contractor.

1.2.5 Discrepancies between instructions:

If any discrepancy occurs between the various instructions conveyed to contractor or his authorized representative or if any misunderstanding arises between the contractor's staff and IIM's staff, the contractor shall report the matter immediately to the IIM. The decisions of IIM shall be final and binding. Moreover, no claims for losses due to discrepancies between instructions, doubts or misunderstandings shall be admissible.

1.2.6 Change in specifications and valuation of extra & deviated items:

If there is any variation in specification for any change in make of item, then it has got to be approved from the IIM prior to installation or execution and the financial effect, plus or minus, or impact shall be incorporated accordingly by the IIM. If any of the items to be executed is not included in the schedule of quantities, then the contractor shall submit the rate analysis of the item specifying the actual landed cost on basis of prevailing rates of material, labor incidental charges and allowing 15% to cover overhead & profit. The contractor shall submit all necessary supporting documents in original to the IIM.

The rates of such items shall be recommended and approved by the IIM and shall be binding on the contractor. No escalation shall be considered till completion of the project.

1.2.7 Work not specified in the specification:

If for any work, no specification has been given in the tender document, then the work will be executed as per the IEC/IS specifications, and if the work is not covered by IEC/IS specifications also, then it should be executed as per standard engineering practice, subject to the approval of the Engineer-in-Charge.

1.2.8 Testing:

The Contractor shall agree for testing of materials and works as mentioned in the specification of various items and works involved in the project.

If the various tests prescribed in the specifications at specified intervals for ascertaining the quality of the work done prove unsatisfactory, the IIM shall have the authority to

instruct the Contractor to re-execute the work done or make alterations as per the orders of the IIM.

1.2.9 Liabilities for defects and rectifications:

If it shall appear to the IIM that any work has been executed with imperfect or unskilled workman or with materials of any inferior description, or of quality inferior to that contracted for, or otherwise not in accordance with the contract, the contractor shall on demand in writing from the IIM or his representative specifying the work, materials or articles complained of, notwithstanding that the same may have been inadvertently passed, certified and paid for forthwith rectify or remove and reconstruct that work so specified and provide other proper and suitable materials or articles at his own charges and cost, and in the event of failure to do so within a period to be specified by the IIM or his demand aforesaid, the In-Charge may on expiry of notice period rectify or remove, re-execute the work at the risk of Contractor and the cost shall be recovered from the Contractor. The decision of the IIM as to any question arising under this clause shall be final and conclusive.

1.2.10 Period of liability:

The liability period of the work shall be 60 months from the date of completion of the work as certified by the IIM and this date will be as indicated in the provisional completion certificate. If any damage or defect occurs during the period of liability the same will be rectified by the contractor at his own expense to the satisfaction of the IIM. If the contractor fails to do so, then the IIM shall have the authority to get the work done by other means and the Expenditure incurred shall be recovered from the contractor.

1.2.11 Suspension of work:

The contractor shall suspend the progress of work on receipt of the written order from the IIM for any of the following reasons:

(i) On account of any default on the part of the contractor. In this case the contractor shall be entitled for the extension of time, but the contractor shall have no claim for payment of compensation for re-execution of faulty works.

(ii) For execution of the works for reasons other than the default of the contractor.

(iii) For safety of the works

In case of suspension of work:

a. The contractor shall during such suspension, properly protect and secure the works and carry out the instructions of the IIM.

b. If the suspension is ordered for the reasons 1.2.11 (ii) as stated above, the contractor shall be entitled for extension of time equal to the period of every such suspension but no compensation for damages etc. shall be admissible on account of suspension of work.

1.2.12 Possession Prior to completion:

The IIM shall have authority to take possession of any completed or partially completed works. Such possession shall not be deemed to be acceptance of any work completed in accordance with the contract. If such prior possession delays the progress of works, then the adjustment in the time of completion shall be done accordingly. The decision of the Engineer-in-Charge regarding the extent of delay shall be final and binding.

1.2.13 Care of Works:

From the commencement to the completion of works, the contractor shall take full responsibility for the care of all works including all civil work and in case any damage or loss occurs then the contractor shall repair and make good the same at his own cost so that on completion of the work, the same shall be in good order in every respect in accordance with the contract and to the satisfaction of the IIM.

1.2.14 Training and User manual:

Contractor shall train at least 2 representatives nominated by the Engineer In charge for the Day to Day function/ operation of the plant and to identify the type of problem if any (for proper communication to the OEM repair team). User manual may also be provided.

1.3 Certificate and Payment

1.3.1 Schedule of Rates:

(i) The payments to be made to the contractor shall be as per the finalized rates in tender documents and the rates of extra items finalized from time to time.

(ii) The rates finalized in the tender document shall remain firm till the completion of work including extension of time, if any.

(iii) After the completion of the work, the contractor will have to submit the clearance certificate for all statuary payments.

1.3.2 Measurement:

The contractor's authorized representative shall take joint measurement of the various items of the work in presence of the IIM's authorized representative and preparing the bills. If the contractor fails to send his representative, then the measurements taken by the IIM's shall be final and no claim shall be entertained in this regard.

1.3.3 Mode of Payment:

All measurements shall be in the metric system and in accordance with Indian Standard Specifications and in accordance with standard engineering practice. If the contractor has any objection regarding the measurements, then the contractor shall inform the IIM immediately. The decision given by the IIM shall be final and binding on the contractor. In case of mode of measurement of any item is not specified, and then I.S.I mode of measurement (as applicable during contract period) shall be followed.

1.3.4 Mobilization Advance:

No mobilization advance shall be paid.

1.3.5 Billing:

The contractor shall submit complete bill only after complete satisfaction of Engineer in charge or User (complete in all respect).

1.3.6 Terms of Payment:

(i) The payment due to the contractor shall be made only in Indian Currency by Crossed Account Payee Cheque or RTGS. In no case, will the IIM be responsible if the cheque is misled or miss-appropriated by the contractor or his representatives. The cheque shall be released only against submission of duly signed and revenue stamped receipt.

(ii) IIM, Lucknow reserves the right to carry out post payment audit and technical examination of the bills and work executed including all supporting vouchers etc. the IIM further reserves the right to enforce recovery of over-payment when detected. Similarly, if any under payment is discovered, the amount shall be paid to the contractor.

(iii) Wherever any claim for the payment against the contractor arises as per the contract, the same may be deducted from the bill of the contractor or from his security deposit.

(iv) 5% of the payable bill value will be retained from each bill as retention money & shall be released on the satisfactory completion of the job after the defect liability period of 60 months. No interest shall be paid on security deposit amount.

(v) **Tax Deduction:** All statuary deduction like Income Tax, Works Contract Tax, E.S.I., P.F or any other government-imposed liability shall be borne by the contractor (as applicable at the time of execution of job) and shall be deducted from each bill submitted by the contractor.

(vi) **Contractor shall be responsible for any State Entry Tax, octria etc.** whatever applicable/ required to pay for Transportation of the Material from factory to the Site.

1.3.7 Provisional Completion Certificate:

When the contractor successfully completes the works as per the contract, he shall be eligible to apply for provisional completion certificate in respect of the works. The IIM shall issue to the contractor the provisional completion certificate after verifying from the completion documents submitted by the Engineer-in-Charge and satisfying him that the work has been completed in accordance with the contract document. The contractor, after obtaining the provisional completion certificate, is eligible to present the final bill for the work executed by him under the terms of the contract.

The work will not be considered as complete and taken over by the IIM until all the temporary works, labor hutments etc. are removed and the work site cleared to the satisfaction of the IIM.

If the contractor fails to comply with the requirements of the above on or before the date for the completion of the works, the IIM may, at the expense of the contractor, remove the tools and plants and surplus materials and dispose-off the same and the contractor shall pay the amount of all expenses incurred.

1.4 Labour Laws and Safety Regulations

1.4.1 Labour Laws:

(i) Labour below the age of 18 years shall not be employed on the work.

(ii) The contractor shall not pay less than what is specified by the law to labours engaged by him on the work.

(iii) The contractor shall, at his own expenses, comply with all labour laws and the IIM shall not be responsible for any recovery/penalty imposed by the respective authorities for violating the labour laws.

(iv) If the contractor is covered under the Contract Labour (Regulation & Abolition) Act, he shall obtain a license from the licensing authority (i.e. the office of labour Commissioner), by payment of the necessary prescribed fee and deposit, if any, before starting the work.

(v) The contractor shall furnish to the IIM, the details of the workers employed on the works.

(vi) The contractor shall comply with the provisions of the existing rules and regulations relating to labour laws.

(vii) The IIM shall on a report having been made by an inspecting officer as defined in Contract Labour (Regulation and Abolition) Act, 1980, have the power to deduct from the amount due to the contractor any sum required or estimated to be required for making good the losses suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers, or if deductions made from his or their wages which are not justified by the terms of contract or non-observance of the said regulations.

1.4.2 Minor/Fatal Accident on Duty:

For cases of minor/Fatal accident on duty not covered under compensation by insurance, the contractor shall have to compensate the affected person. The absence from duty, if takes place, due to such accident shall be considered as special leave and full payment shall have to be made for duration of such absence.

1.5 Safety Code

1.5.1 Safety and Protection:

The contractor shall adhere to safe construction practice and guard against hazardous and unsafe working conditions. While carrying out the work, the contractor should provide for;

(i) Safety of personnel engaged in the construction.

(ii) Protection and safety of works and materials during their progress.

(iii) Sanitary and hygienic conditions of working and living for his workers, as required by the IIM.

(iv) The contractor shall have to ensure availability and use of all desired safety gadgets like safety belts, helmets, goggles, hand gloves, gumboots etc.

1.5.2 First Aid:

The contractor shall provide first aid facilities for his employees and those of his sub-contractors. The requisite first aid box and medicines should always be available at work site.

1.5.3 Contractor's Barricades:

The contractor shall erect and maintain barricades required in connection with his operations to guard or protect:

(i) Excavations

(ii) Hoisting Areas

(iii) Areas adjudged hazardous by the contractor's or IIM's representatives.

(iv) Charged electrical panels.

(v) IIM's existing property liable to get damaged by contractor's operation.

1.5.4 Preservation of Peace:

The contractor shall take precautions to prevent any riotous or unlawful behavior by his workers, for the preservation of peace and protection of inhabitants and the security of property in the neighborhood of the work.

1.6 Details of Work Execution

(i) The work shall be done in such a manner so as to clear work force availability for other agencies working at site.
(ii) Finish of work shall be as per details given by IIM.
(iii) In general the complete work is to be done as per Indian Standard and esthetical norms as specified and detailed in Tender.

1.7 Site

The site is located at IIM Lucknow, IIM Road, Lucknow. The contractor shall be responsible for accommodation of the manpower, the movement of his men, material and equipment at his own cost.

1.8 Electricity

Electrical power at one point to be provided by the IIM. The Contractor will be responsible for getting electrical connectivity including supplying of cables, connections, and other required items.

1.9 Contractor's Scope of Supply

All materials required for executing the jobs specified in the Bill of Quantities, inclusive of all tools, tackles, scaffolding, consumables and testing equipment's shall be procured and supplied by the contractor at his own cost except for any items specified as IIM supplied.

1.10 Recovery from the Contractor

(i) If the contractor or his employees damage or destroy the property of the IIM, then the same shall be replaced / refunded by the contractor, otherwise the expenses may be recovered from his bill or security deposit.
(ii) All compensation and recoveries to be made as per terms of the contract shall be deducted from the contractor's bill or security deposit.
(iii) Forfeiture of Security Deposit: Whenever any claim against the contractor is to be recovered then the same may be made from the security deposit. If the contractor abandons the work or leaves the work incomplete, then the IIM has the right to forfeit the security deposit.
(iv) The contractor will make fence around the area given for labour hutment to avoid unauthorized entry.

1.11 Clause for indemnify

The contractor shall fully indemnify and keep indemnified IIM against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against IIM in respect of any such matters as aforesaid, the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise there from, provided that the contractor shall not be liable to indemnify the President of India if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by IIM in this behalf.

1.12 Liquidated damage charges

0.05% per day of contract value for delay up to 15 days. 0.10% per day of contract value for delay from 15-45 days and for delay beyond 45 days it will be Rs. Five Thousand per day to the maximum limit of 10% of the ordered value. After that tender will be automatically cancelled. The delay shall be reckoned from the end of 03 months from the date of issue of LOI.

1.13 Service of Notice

All notices, consents, approval or other communication required to be given or served hereunder by either party hereto to the other party shall be in writing, and in English and shall be personally delivered to, left at, sent by registered post, email, courier, speed post or facsimile by either party to the other at the addresses mentioned here in below. Both parties agree that the facsimile transmission will not be used as a sole method for the communication of important notices such as any modification or termination.

(i) THE DIRECTOR
INDIAN INSTITUTE OF MANAMEMENT
PRABANDH NAGAR, IIM ROAD
LUCKNOW-226013

(ii) Notice to the Tenderer at the Address mentioned in the Tender Document

1.14 Other Conditions & Instructions

(i) All materials to be used in execution of project shall be of first class quality; I.S.I marked and shall be approved by IIM before its application.

(ii) The work should be carried out in truly professional manner, neatly finished with proper line, level and plumb. Cleanliness and finishing of the job is of utmost importance. Hence the job should be done most carefully with best workmanship. For all finishing jobs samples should be approved from the Engineer-in-Charge before completely executing the work.

(iii) The IIM should be immediately informed for any discrepancy in specifications and instructions in the execution of job at site before actual execution of particular item having discrepancy.

(iv) Any item found to be having been executed with poor workmanship or materials of inferior quality then the contractor shall have to rectify / reconstruct the work as specified by IIM. No extra charge will be admissible in such case. If contractors fail to do so, the IIM reserved the right to rectify / reconstruct the work through some other agency at the expenses of contractor.

(v) The schedule of activities as submitted by the contractor shall have to be strictly adhered to. Regular progress reports shall have to be submitted by the contractor giving all details for monitoring of the schedule.

(vi) The contractor shall take charge of site and if site clearance is involved, he shall attend to it (If such type of unforeseen and unavoidable situation occurs, in that case actual labour employed for such job shall be paid including overheads and profit).

(vii) Special care is to be taken for cleanliness of the site. After the end of day's work the site should be cleaned immediately.

(viii) The contractor shall have to co-operate with the agencies in execution of other works in the same area.

(ix) While executing the work, the contractor shall ensure safety and security of the property of the IIM so as to avoid theft etc.

(x) Certain specialized items of works may be carried out directly by the specialized agencies which are directly appointed by the company, the contractor has to coordinate and cooperate such agencies by providing them clear way of working, correct size of opening, levelled floors or any such requirements which the contractor has to perform on his part.

(xi) Absolute cleanliness is must while working.

(xii) All care to be taken not to damage existing structure and related things. All dismantled debris to be carted away immediately from the site.

(xiii) For any kind of discrepancy or unforeseen happenings, inform the IIM immediately.

1.15 Condition for providing Comprehensive warrantee

a) Total expense for all needed repairs, servicing and replacement of the parts/ assemblies or any other item in the system as may be needed from time to time shall be beard by the contractor.
b) Annual/ as and when required cleaning before start of the season including de-scaling of the main system components, complete checkup of electrical back up system, cleaning of tank and all other preventive maintenance job.
c) At close of season the contractor will do the same thing and arrange preventive coat / measures to ensure that rushing etc. in the system is minimized to the max extent.
d) To attend to service calls as and when required maximum within 12 hours of the call.
e) The operation period of Water Heating System shall be for 9 months per year (i.e. July to next March).
f) The Warrantee related service should be provided at the site of installation at IIML.
g) The Warrantee shall be comprehensive inclusive of all spare and labour related repairs.
h) During the warranty period, the defective parts shall be replaced for proper operation with original spare parts only.

ANNEXURE-A

Detail of Heat pump to be install

S No.	Hostel	Type of System	Proposed
1	Hostel No. 1	Heat Pump with storage tank	02 no. Heat Pump with 300 ltrs Tank
2	Hostel No. 2	Heat Pump with storage tank	02 no. Heat Pump with 300 ltrs Tank
3	Hostel No. 3	Heat Pump with storage tank	02 no. Heat Pump with 300 ltrs Tank
4	Hostel No. 4	Heat Pump with storage tank	02 no. Heat Pump with 300 ltrs Tank
5	Hostel No. 5	Heat Pump with storage tank	02 no. Heat Pump with 300 ltrs Tank
6	Hostel No. 6	Heat Pump with storage tank	02 no. Heat Pump with 300 ltrs Tank
7	Hostel No. 7	Heat Pump with storage tank	02 no. Heat Pump with 300 ltrs Tank
8	Hostel No. 8	Heat Pump with storage tank	02 no. Heat Pump with 300 ltrs Tank
11	Hostel No. 11	Heat Pump with storage tank	03 no. Heat Pump with 500ltrs Tank
12	Hostel No. 12	Heat Pump with storage tank	03 no. Heat Pump with 500ltrs Tank
18	FPM -1	Heat Pump with storage tank	04 nos. Heat Pump with 300ltrs Tank
19	FPM - 2	Heat Pump with storage tank	04 nos. Heat Pump with 300ltrs Tank

ANNEXURE-B

Specification of Heat Pump		
Parameters		**Specification**
Power Supply	(V/ph.)	220/1
Frequency	Hz	50
Refrigerant /weight	gram	R417A/1200
Pressure loss	KPa	40
Max Suction /discharge pressure	MPa	1.2/2.8
Max. Heat Exchanger pressure		2.8
Water connection size		G3/4"
Level Against Electric Shock		I
Water Proof Grade		IPX4
Noise	Db(A)	≤63
Operation Temperature Range	℃	-04 ~ 43
Maximum output water temperature in ℃	℃	60 ^{0} C ^{0} to 70^{0}
Min. Warranty		**5 Years**

Insulated Storage Hot Water Tank for heat pump		
S.No	**Description**	**Specifications**
1	Capacity	500 / 300 LPD
2	Type	Non-Pressurized
3	Configuration	Horizontal
5	Inner Container	SS304
6	Outer Shell	Pre-coated Steel/ Aluminum
7	Welding of inner Tank	MIG welding
8	Insulation	Puff
9	Thickness	50 mm or above
10	**Minimum Guarantee**	**5 Year**

B. PIPING

a. Material Medium class (B class) GI as per IS 1239 shall be used for piping. Thermal insulation of hot water pipes should be minimum 75 mm thick Rockwool of GI pipes. For higher density insulations, the thickness may reduce proportionally.

CPVC pipes & fittings used in hot & cold potable water distribution system shall conform to requirement of IS 15778. The material from which the pipe is produced shall consist of chlorinated
polyvinyl chlorides. The polymer from which the pipe compounds are to be manufactured shall have
chlorine content not less than 66.5%.
The internal and external surfaces of the pipe shall be smooth, clean and free from grooving and other defects. The pipes shall not have any detrimental effect on the composition of the water flowing
though it.

b. Thin plastic shall be used as covering between glass wool and Aluminium cladding beside other retaining material like chicken mesh. 26 SWG or above aluminium sheet shall be used for cladding material or PE pipe of suitable dia may be used for cladding over PUF insulation.

c. Installation: the pipeline should be properly supported and fixed with clamp with the help of suitable size stand/civil structure (Cement concrete ratio 1:4) ISI mark strain of standard make should be fitted in the main cold water supply line/overhead tank before the system. The hot water pipe line should be provided up to the point required by the user

C. Valve/Nipples/tees/Bends:

Gunmetal valve as per ISI specifications shall be used of reputed make such as Kartar, Zoloto or Equivalent. Nipples/Tees and bends shall be of medium class GI (B class) of reputed makes such as union or equivalent. Air vent in each row shall be provided.

D. Instrumentation:

Temperature Gauge 2 No's for non-heat exchanger systems and 4 no's for heat exchanger systems are to be installed.

G. Cold water tank:

Material Only (HDPE/LDPE~~)~~ having minimum three layers with gun metal float valve (ISI mark of Sintex or Equivalent make) equal to the capacity of hot water storage tank should be installed with the facility for maintenance

a. Installation- The tanks will be mounted on stands made out of hot dipped galvanized angle iron frame of 35x35x5mm upto 1000 Ltr with each leg duly grouted with PCC 1:2:4 of 1'x1'x1' size with proper gola etc. works to seal the junctions, joints and fissures. The cold water tank will be placed over angle iron frame having 4 cross members in 4 leg with 5 mm. thick MS Sheet for full bottom support fixed of 4 horizontal members based on the size of the cold water tank. The upper side of the tank should be clamped with stand to ensure the stability during storm.
b. Make up water tank: A suitable make up water tank should be provided with the system material to be HDPE/LDPE or equivalent

   Electrical Back-up: Depending on the user requirements, electrical back-up system in the hot water tank of appropriate ratings is to be installed. So that the temperature of hot water in the hot water tank is maintained. The operation of electrical back-up is to be governed using a control panel/thermostat depending up on the capacity of the system. The details of electrical backup is as follows: -
   For 700-800 LPD – 3 Nos. x 3 KW
   For 1100 – 1200 LPD – 4 Nos. x 3 KW

Notes:

1. Out of the approved makes of materials mentioned above, the make of materials to be used on the work shall be as decided by the Engineer-In-charge.
2. The Contractor shall produce samples before procurement of the material for approval of the Engineer-In-charge. The material of the makes out of the above as approved by the IIM/ Engineer-In-charge shall be used on the work.
3. Materials for which approved makes are not specified above shall be decided by the IIM/ Engineer-In-charge and as per sample got approved before procurement.

BILL OF QUANTITY

Supply, Installation, Testing & Commissioning of Heat Pump along with storage tank for hostel no. 01 to 10, 11, 12 & FPM I & II at IIM

S. No.	Description of Items	Unit	Quantity
1	**AIR SOURCE HEAT PUMP FOR GENERATING HOT WATER**		
	Providing, fixing, testing and commissioning of Heat pumps using energy heat source from ambient air to Hot water, of High efficiency and energy saving operation, capable of heating water from 4 deg. Celsius and less to 60 degrees and above (m maximum 75 Deg.) operation (the sound level should not exceed 65 dB). The Heat Pump shall have LCD display control panel with built in diagnostic and troubleshooting information and an inbuilt cycle for defrosting in case icing occurs on evaporator including all other mounting, fitting and controls, all interconnecting wiring/cabling between heat pump and electric panel etc complete in all respect with but not limited to following specifications.		
	TECHNICAL SPECIFICATIONS FOR EACH UNIT		
	Hot water rated output volume - 100 to 150 Ltr/Hr, Power Supply V/Ph/Hz: 400~440V/3 PH/50Hz, Suggested Maximum output water temperature in Deg C: 60 ^{0} C to 75 Deg. Celsius, Type of Fan: Low Noise axial fan, Suggested Noise level: DBA <63, Suggested COP: 4.0 or above, Within Built Hot Water Recirculation Pumps. Within Built Hot Water Recirculation Pumps		
1.1	1.5 Tonne / Nearest higher capacity Suitable model as per the standard model of OEM.	Nos.	23
1.2	2.0 Tonne/ Nearest higher capacity Suitable model as per the standard model of OEM.	Nos.	6
2	**Hot Water Storage Tank**		

	Providing, fixing, testing and commissioning the pressurized Hot Water Storage Tank of following Capacity consisting of S.S 304/316 cylindrical shape clarifier tank. (Inlet temperature of hot water storage tank 60- 85 deg.C) stainless Steel inner tank to be designed/ suitable for pressure upto10 Kg/ Sq. cm (minimum Th. 0.63 mm) and tested and coated with Enamel Glass coating and Anode rod to control scaling. Tank shall be provided inlet / outlet, pressure release connection arrangements. SS tank to be designed/ suitable for working pressure of 6 Kg/ Sq. cm and above, pressure relief valves, pressure gauge at outlet with isolation cock, Digital thermometer at the centre of the Tank with, ball Valve, safety valve, check valve etc. The complete system to be tested to a pressure of 10 Kg/cm2 complete in all respects including temperature indicators, thermostat. Also Attached with following heating elements and its connection with the thermostat for auto cut off and other required accessories. Tank shall be insulated with 100 mm thick crown 150 grade & 50 mm or more thick rock wool pads of approved quality and cladded with 20 SWG powder coated M.S. Sheet cladding.		
2.1	TANK CAPACITY - 500Ltr. Within built 1 no. 2 KW or the nearest higher power Heating Element as per the standard model of OEM and Thermostat and provisions for providing 1 no. additional heating Element in case required later.	Nos.	6
2.2	TANK CAPACITY - 300 Ltr. Within built 1 no. 1.5 KW or the nearest higher power Heating Element as per the standard model of OEM Heating Element and Thermostat and provisions for providing 1 no. additional heating Element in case required later.	Nos.	23
	TANK CAPACITY - 200Ltr. Within built 1 no. 1.5 KW Heating Element and Thermostat and provisions for providing 1 no. additional heating Element in case required later.	Nos.	1
3	Hydro pneumatic/ Booster Pump		
	Supply, Installation, Testing & Commissioning of complete composite hydro pneumatic system consisting of horizontal /vertical multistage centrifugal pump having stainless steel SS-304 stage casing and SS 304 impellers with stainless steel SS-304 shaft as per IEC standards and GJL250 cast iron suction & discharge casing with single mechanical seal and pressurised tank of suitable capacity as per manufacturer calculation, complete with all standard accessories including pressure switch, pressure gauges, non-return & isolating valves on suction and delivery side with nuts, bolts & washer including mild steel flanges, where ever required with 3 mm thick rubber insertion, with necessary protection and operational devices i.e. alternate pumping operation and shut-off during dry running conditions etc. with suitable electrical motor to be operated on 210/220 OR 400/440 volt 50 cycle AC supply, suitable for following duty and complete with Control Unit Panel, manifolds & chassis, as per the approval of Project-in-charge complete with M.S fabricated base frame, nuts and bolts bolted to cement concrete foundations/ Base complete as per requirement.	Nos.	16
	No of Pump -		
	Flow - 1000 LPH or more Per Pump		
	Head - 15 M - 30M or more		
	B. PLUMBING WORKS		
4	**COLD AND HOT WATER PIPE LINE**		
	Providing and fixing to wall, ceiling and floor CPVC pipes surface mounted		
	10.00 kgf/sq cm working pressure (of Approved make)		

	with pipe sifting, wall clips/ clamps , making good the wall ceiling and floor, including cost of all materials labour charges, Hierarchical Object Model of equipment's and testing complete as per Specifications including loading, unloading, lead, lift, transportation , Jointing solution etc. from the Direct water supply(point available at the Terrace near the Building's overhead Tank) and/ or from overhead Tank (Dedicated Tank for the Solar Water Heater) with provisions to feed the solar water heater tank and Heat pump and geyser from any of the source(As per the requirement) any other incidental charges and as directed by Engineer In charge. The contractor is required to check and understand the hot water flow requirement and prepare the shop drawings accordingly. These shop drawings must be approved by the Engineer Incharge before execution of the plumbing works.		
i	40 mm outer Diameter	Rmt	10
ii	32 mm outer Diameter	Rmt	520
iii	25 mm outer Diameter	Rmt	775
iv	20 mm outer Diameter	Rmt	171
v	15 mm outer Diameter	Rmt	85
5	Providing and fixing to wall, ceiling surface mounted and floor galvanized iron pipes (Approved make) with all required fitting (medium grade weight 1.65 kg/mtr) B class including cost of all materials and labour charges, HOM of equipment's and testing complete as per specifications including loading, unloading, lead, lift, transportation, any other incidental charges including extension/ interconnection with Existing concealed G.I. Hot water running from the shaft to respective wash rooms and as directed by engineer in charge. Rates includes cost of Fittings required such as Reducer, Elbow, Tee etc. except the rates for Angle Valve, Gate valve, Ball valve and Pressure/Temperature gauges (if the same is required as per the Design)		
i	32 mm outer Diameter	Rmt	45
ii	25 mm outer Diameter	Rmt	45
iii	20 mm outer Diameter	Rmt	50
iv	15 mm outer Diameter	Rmt	50
6	Providing and fixing in position CPVC Gate valve (Approved make) including cost of all materials, labour and HOM of equipment's with all lead complete as per specifications, including loading, unloading, lead, lift, transportation, any other incidental charges and as directed by engineer in charge.		
i	32 mm outer Diameter	No	12
ii	25 mm outer Diameter	No	20
iii	20 mm outer Diameter	No	30
iv	15 mm outer Diameter	No	12
7	Providing and fixing in position CPVC Ball valve (Approved make) including cost of all materials and adapters what so ever required to fit to the CPVC/ G.I. line (as per the requirement), labour and HOM of equipment's with all lead complete as per specifications, including loading, unloading, lead, lift, transportation, any other incidental charges and as directed by engineer in charge.		
i	32 mm outer Diameter	No	26
ii	25 mm outer Diameter	No	104
iii	20 mm outer Diameter	No	130
iv	15 mm outer Diameter	No	104

8	Providing and fixing in position brass gate valve of (Approved make) including cost of all materials and adapters what so ever required to fit to the CPVC/ G.I. line (as per the requirement), labour and HOM of equipment's with all lead complete as per specifications, including loading, unloading, lead, lift, transportation, any other incidental charges and as directed by engineer in charge.		
i	32 mm outer Diameter	no.	12
ii	25 mm outer Diameter	no.	25
iii	20 mm outer Diameter	no.	25
iv	15 mm outer Diameter	no.	25
9	Supplying, laying, fixing, testing and commissioning of following thickness closed cell elastrometric nitrile rubber of class 'O' applied by suiatable adhesive, as per specifications and as required complete in all respect.	sq m	
	16.5.2 19mm	sq m	130
10	Providing and fixing in position Tank Nipple/FTA/MTA as per the requirement for connecting the cold water supply from Overhead storage tank and Direct water supply for CPVC pipes of any diameter (Approved make) including cost of all materials, labour and HOM of equipment's with all lead complete as per specifications, including loading, unloading, lead, lift, transportation , any other incidental charges and as directed by engineer in charge. Payment will be made as per no. each.	Nos.	23
11	Supply fabrication and fixing of MS/ Aluminium structural stand as per the dimensions of the heat pump and the storage tanks/ as being supplied by the OEM so as to fit both the heat pump and storage tank with the required distance in between them. Finished with anti-corrosive coating and powder coated in colour as per the standard of the OEM (Original equipment Manufacturer including loading, unloading, lead, lift, transportation, fixing or any other incidental charges and as directed by Engineer In Charge.		
i	For 500 liters capacity Storage Tank + 1.5 tonne heat pump.	Nos.	2
ii	For 300 liters capacity Storage Tank + 1.0 tonne heat pump.	Nos.	23
iii	For 200 liters capacity Storage Tank + 1.0tonne heat pump.	Nos.	1
12	Supply fabrication and fixing of MS structural stand / any additional arrangement required for the proper fixing/ laying/ installation of the complete system (if in case required . the requirement to be confirmed by the Engineer Incharge) including loading, unloading, lead, lift, transportation , any other incidental charges and as directed by Engineer In Charge. (i.no. 10.10 DSR 2018)	Kg	250
13	Providing and placing on Terrace Six Layered Polyethylene water Storage Tanks conforming to I.S. code 12701with man hole lid and suitable locking arrangements Making holes of suitable diameter for inlet, outlet and overflow pipes including cost of materials, labour transportation charges HOM of equipment's with allied complete as per specifications, including loading, unloading, lead, lift, transportation, any other incidental charges and as directed by engineer in charge.		
	500 liters capacity storage tank.	Nos.	5
C. Electrical Works.			

14	Providing and fixing of additional Heating element of Following Heating Capacity to the water heating unit storage Tanks (in case its requirement is felt for effective heating in adverse climate.)		
I	2 KW	Nos.	1
Ii	3 KW	Nos.	1
Iii	4 KW	Nos.	1
15	**Electrical wiring etc.**		
	Electrical installation i.e. wiring in heavy duty PVC conduit and providing 4 pole MCCB's, SPMCB, MS enclosure boxes and copper wire as given below:		
a)	Providing & laying copper wire 4x6 mm 2 & 2.5 mm2 copper wire for earth from main panel to system. Rallison/Havells/Equivalent make in 1"dia PVC conduit including termination with copper lugs complete as required (DSR 2018-1.7.5)	RMT	800
b)	Providing & fixing SPMCB 32 Amp. (3 nos.) For each system & 1 no. Neutral link in MS enclosure box outdoor type near each systems MDS/Legrand/Equivalent make (DSR 2018- 1714)	Set	48
c)	Providing & fixing of 40 amp 4 pole ELCB, 1 no. for each system including MS enclosure box MDS/Legrand/Equivalent make for controlling the heating system near main electrical panel. (DSR 2018- 1721)	Set	30
16	Earthing of water heating system		
16.1	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	RMT	130
16.2	Supplying and laying 25 mm X 5 mm copper strip at 0.50 metre below ground as strip earth electrode, including connection/terminating with nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50mm)	RMT	130
16.3	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. (but without charcoal/ coke and salt) as required.	Set	14
	BUYBACK		
17	The Dismantling of hot water storage tank capacity 1100 liters (along with its structure) of existing old solar water heating system at Terrace of Different Hostels to be purchased by the Tenderer under buy back arrangement, collecting at one place, loading, unloading and transporting by vendor to his desired destination at his own cost and risk. Not returned/ scrap/ left over material to be disposed off at the desired location. Buy Back Cost to be adjusted in final bill of vendor. The necessary gate pass shall be issued by IIM Lucknow after completion of project.	Set	2
18	The Dismantling of hot water storage tank capacity 1200 liters (along with its structure) of existing old solar water heating system at Terrace of Different Hostels to be purchased by the Tenderer under buy back arrangement, collecting at one place, loading, unloading and transporting by vendor to his desired destination at his own cost and risk. Not returned/ scrap/ left over material to be disposed off at	Set	2

	the desired location. Buy Back Cost to be adjusted in final bill of vendor. The necessary gate pass shall be issued by IIM Lucknow after completion of project.		
19	The Dismantling of hot water storage tank capacity 800 liters (along with its structure) of existing old solar water heating system at Terrace of Different Hostels to be purchased by the Tenderer under buy back arrangement, collecting at one place, loading, unloading and transporting by vendor to his desired destination at his own cost and risk. Not returned/ scrap/ left over material to be disposed off at the desired location. Buy Back Cost to be adjusted in final bill of vendor. The necessary gate pass shall be issued by IIM Lucknow after completion of project	Set	16
20	The Dismantled flat collector plate units (along with its structure, frame, its piping and insulation etc.) of existing old solar water heating system at Terrace of Different Hostels to be purchased by the Tenderer under buy back arrangement, collecting at one place, loading, unloading and transporting by vendor to his desired destination at his own cost and risk. Not returned/ scrap/ left over material to be disposed off at the desired location. Buy Back Cost to be adjusted in final bill of vendor. The necessary gate pass shall be issued by IIM Lucknow after completion of project. A unit mean a single flat plate collector module.	units	176
	Grand Total		

Signature with seal of the Contractor