

TENDER DOCUMENT

FOR

Design, Supply, Installation and Commissioning of Solar Water Heaters at Hostel - 5 Building NIBM- Pune

Including

5 Years Warrantee/ Guarantee & AMC

Tender Notice No: NIBM/ESTATE/ELECT/2018-19

TENDER NO. NIBM/ESTATE/ELECT/2018-19/Hot solar

NAME OF FIRM.....

NATIONAL INSTITUTE OF BANK MANAGEMENT
Kondhwa khurd ,PUNE-411048

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PART-I

GENERAL DETAILS

Tender Notice No. Nibm/estate/elect/ 2018-19 /hot solar

Sealed (technical and commercial bid) tenders are invited from all eligible manufacturers and experienced contractors for Design, Supply, Installation & commissioning of Solar Water Heating Systems of -500x6 = 3000 ltrs & 500x 2 =1000 ltrs. Total 4000 -- LPD .

The detailed notice, eligibility criteria and tender document can be seen/downloaded from nibmindia.orgn future, any further notice/information related to this tender shall be uploaded on the same website only. The undersigned reserves all the rights to reject any or all the tenders without assigning any reason.

Solar Water Heating System (SWH) systems, from MNRE approved manufacturers/channel partner of MNRE or their authorized representatives, fulfilling the eligibility criteria as per MNRE STD 01:2013 latest system specifications(up to date amended from time to time) and conforming to MNRE s guidelines/minimal technical requirements details enclosed /standards for SWH systems and amendments thereof. Tenderers who have obtained the valid test reports for SWH systems, issued by Solar Energy Centre /other Authorized Test Centres on the date of opening of technical bid and subsequently renewable up to period of validity of rates ie one year from the date of signing agreement, conforming to the above mentioned criteria would be eligible for participation. The Tenderers shall ensure full compliance with the below mentioned technical specifications for SWH systems, even in case of any further amendment(s) thereof in this regard, during the entire period of the Agreement signed under this Tender.

FROM :- (Full name and address of the tenderer)

M/s.....
.....
.....
.....

To,

The Director
National Institute of Bank Management
Kondhwa Khurd-PUNE. 411048

Subject : Offer in response to Tender Notice No. nibm/estate/elect/hot solar/2018-19

Sir,

We hereby submit our offer in full compliance with terms & conditions of the attached tender. The tender is being submitted in two separate and sealed envelopes marked Part I Technical bid & Part II Commercial bid.

(Signature of Authorised persons with Agency Seal)

PARTICULARS OF TENDER

1	Tender Notice No.	Nibm/ estate /elect / hot solar /2018-19
2	Particulars of the work	Design, Supply, Installation & Commissioning of Solar Hot Water system Capacity of 500 x6 =3000 ltrs & 500 x2 =1000 ltrs with parallel and series connection units with back up heater.at NIBM Executive hostel (Hostel-5) in NIBM CAMPUS Pune including 5 years Warrantee/ Guarantee
3	Quantity	500 x6 = 3000 ltrs & 500 x2 =1000 ltrs parallel & series connection . Two systems.
4	Period of contract	One month from date of work order.
5	Cost of tender document	Rs 600.00
6	Last date/ time of submission	By 10:00 am on 25/02/2019
7	Estimated cost of work
8	Amount of Earnest money	Rs. 10000.00
9	Validity of offer for acceptance	Six Months from the date of opening of the Technical bid
10	Date and Time of opening of tender	At 11:00 am on 25/02/2019
11	Place of opening of tender	NIBM ESTATE DEPT/ Purchase section , Pune
12	Completion Period	25 days from the date Work Order

Note:-

1. The tender document can be obtained on any working day during office hours from the ESTATE DEPT/ PURCH SECTION,,NIBM, Pune , till -22.01.2019.
2. It can be downloaded also from <http://www.nibmindia.org>
3. Tender document issued by NIBM or downloaded from the above website will only be considered valid.

GENERAL PARTICULARS OF TENDERER

SI	Particulars	Details
1	Name of Tenderer/Firm	
2	Postal Address	
3	E-mail address for communication	
4	Telephone, Fax No.	
5	Name, designation & contact number of the representative of the tenderer to whom all references shall be made.	
6	Nature of the firm (Individual/ Partnership/ Consortium/ Pvt. Ltd /Public Ltd. Co. /Public Sector etc.) Attach attested copy of Registration & Partnership deed / Memorandum of Association	
7	Amount and particulars of the earnest money deposited.	
8	Annual Turn over for last three years (Attach balance sheets from CA in this regard)	
9	Name and address of the Indian/foreign collaboration if any.	
10	GST Registration no.(Copies GST other taxes Registration Certificates to be enclosed)	
11	Has the tenderer/firm ever been debarred by any institution for undertaking any work?	
12	Any other information attached by the tenderer (Details and Annexure / page no. where its enclosed)	
13	Does tenderer have any relative working in NIBM? If yes state the name and designation.	

Tenderers are requested to give their full particulars and legal and financial status.

(Signature of tenderer with Seal)

DECLARATION BY THE TENDERER

I, /We _____ (Hereinafter referred to as Tenderer) being desirous of tendering for the work, under this tender and having carefully noted all the terms and conditions, specifications etc. as mentioned in the tender document do hereby declare that :-

1. The tenderer is fully aware of all the requirements of the tender document and agrees with all provisions of the tender document and accepts all risks, responsibilities and obligations directly or indirectly connected with the performance of the tender.
2. The tenderer is fully aware of all the relevant information for proper execution of the proposed work, with respect to the proposed place of works/site, its local environment, approach road and connectivity etc. and is well acquainted with actual and other prevailing working conditions, availability of required materials and labour etc. at site.
3. The tenderer is capable of executing and completing the work as required in the tender and is financially solvent and sound to execute the tendered work. The tenderer is sufficiently experience and competent to perform the contract to the satisfaction of NIBM. The tenderer gives the assurance to execute the tendered work as per specifications, terms and conditions of the tender on award of work.
4. The tenderer has no collusion with other tenderers, any employee of NIBM or with any other person or firm in the preparation of the tender.
5. The tenderer has not been influenced by any statement or promises by NIBM or any of its employees but only by the tender document.
6. The tenderer is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and central Government that may affect the work, its performance or personnel employed therein.
7. The tenderer has never been debarred from similar type of work by any Government undertaking / Department. (an undertaking on Stamp paper in this regard shall be submitted.)
8. The tenderer accepts that the earnest money may be absolutely forfeited by NIBM if the tenderer fails to sign the contract or to undertake the work within stipulated time.
9. This offer shall remain valid for acceptance for 6 (Six) months from the proposed date of opening of the Technical Bid.
10. All the information and the statements submitted with the tender are true.

(Signature of Tenderer) SEAL

PART-II

INSTRUCTIONS TO TENDERERS

SECTION 1
INTRODUCTION

The tenderer shall provide sufficient documentary evidences to satisfy the following conditions that the tenderer:

- (a) Is an indigenous manufacturer of the Solar Systems or experienced contractor in the field of Solar Water heater system?
- (b) The tenderer fulfills the terms and conditions of eligibility as an indigenous manufacturer of Solar Systems in accordance with the directions of Ministry of New and Renewable Energy Government of India.
- (c) Has adequate plant and manufacturing capacity available, to perform the works properly and expeditiously within the time frame specified in the tender document.
- (d) Has established quality assurance systems and organization designed to achieve high level of equipment reliability in manufacturing of the Solar Water Heater Systems.
- (e) Has adequate financial stability and status to meet the financial obligations pursuant to the scope of work. (The firm must have annual turnover of minimum 60 Lacs during last three years.)
- (f) Has experience of manufacturing, supply and maintenance/after sale services in the field of solar water heater systems of more than 100000 LPD cumulative capacities in the last three years. The details must be submitted in the Performa given in Technical-Bid section of tender document. The tenderer should have a single work order for the installation, testing and commissioning of Similar Size Solar water heater systems.
- (g) Has adequate field service setup to provide good after sale services including necessary repair and maintenance.
- (h) Has provided good after sale services for the works done by him during past years.
- (i) Has Valid Test Certificate of the solar water heater systems as specified and required in the Technical- Bid of this tender document.
- (j) Except above all other requirements are as per norms of MNRE

The above stated requirements are compulsory to be fulfilled by the tenderer and NIBM may also ask for any additional information as may be deemed necessary in public interest.

- (k) No advance payment will be given by NIBM.

SECTION 2

THE TENDER DOCUMENT

2.1 CONTENT OF TENDER DOCUMENT

2.1.1 The tender procedure and contract terms are prescribed in the tender document. In addition to the invitation of tender, the tender document includes the various other documents as given in the table of contents at page no-2.

2.1.2 The tenderer is expected to examine all instructions, terms and conditions, specifications, forms and formats etc as mentioned/ enclosed in the tender document. Failure to furnish all information required in the tender document or submission of a tender not substantially responsive to the tender document in every respect will be at the tenderer s risk and is likely to result in out-right rejection of the tender.

2.2 INFORMATION REOUIRED WITH THE PROPOSAL

2.2.1 The tender must clearly indicate the name of the manufacturer, the types and model & make of each principal item of equipment proposed to be supplied. The tender may also contain details of specifications and other comprehensive descriptive materials in support of technical specifications.

2.2.2 The above information may be provided by the tenderer in the form of separate sheets, specifications, catalogues etc.

2.2.3 Any tender not containing sufficient descriptive material to describe the proposed equipment may be treated as incomplete and hence may be rejected. Such descriptive materials and specifications submitted by the tenderer will be retained by. Any deviations from these will not be permitted during the execution of contract, without specific written permission of

2.3 CLEARIFICATION OF TENDER DOCUMENT

2.3.1 Any prospective tenderer requiring any clarification on the tender document regarding various provisions / requirements/ preparation/ submission of the tender, may contact in writing by letter or fax/ email within one week (7 days) from the date of publication/up-loading of tender at Website. Queries received later shall not be entertained.

2.3.2 Verbal clarifications and information s shall not be entertained in any way.

2.4 AMENDMENTS IN TENDER DOCUMENT

2.4.1 At any time prior to the due date for submission of the tender or even prior to the opening of the financial bid, NIBM may for any reason, whether at its own initiative or as a result of a request for clarification/ suggestion by a prospective tenderer, amend the tender document by issuing a notice.

2.4.2 The amendments will be notified on the website at least 3 days before the proposed date of submission of the tender. NIBM will bear no responsibility or liability arising out of non- receipt of the information in time or otherwise. If any amendment is required to be notified within 3 days of the proposed date of submission of the tender, the last date of submission shall be extended for a suitable period of time.

2.4.3 In case amendments is notified after submission of the tender (prior to the opening of financial bids), all the tenders received by NIBM shall be returned in sealed condition to the concerned tenderers through registered post or courier, for getting their offer revised according to the amended terms and conditions.

2.4.4 All the notices related to this tender which are required to be publicized shall be uploaded on <http://www.nibmindia.org>

2.5 **(To be submitted with Technical Bid)**

Manufacturers Authorization Letter for Representative (On Manufacturer's Letter Head, duly notarized, to be submitted with Technical Bid)

Ref. No.-----

Dt.-----

To,
The Director,
National Institute of Bank Management , Pune 411008

Subject : Authorization for participation in the Tender for quoting our products as per tender requirements.

Ref. : Tender No. _____

Dear Sir,

We M/s _____, who are established and reputed Indian manufacturer/ of _____, having factory/company's registered office at _____ (full address, Phone/Fax/e-mail address etc.), do hereby authorize our representative to M/s _____ (full address, Phone/Fax/e-mail address etc.) to submit the Bid and subsequently negotiate and sign the agreement with NIBM against above referred Tender for _____ (Name & Make of quoted products with details – designing, supplying, fixing, testing & commissioning), as per terms and conditions required under this RFP. We hereby extend our full guarantee and warrantee as per Terms and Conditions of the said tender for goods & services offered. We also confirm to provide the spares for at least five years from the date of supply/installation. We reiterate that goods ordered on the above firm shall be supplied in due time. We also hereby declare that we will be held fully responsible for any mischief/misconduct/non-supply or supply of sub-standard items by our authorized distributor. In such cases, the penalty may be recovered from us.

Thanking you,

For _____

Name & Designation of Signatory

SECTION 3

PREPARATION OF TENDER

3.1 LANGUAGE OF TENDER AND MEASURE

The tender prepared by the tenderer along with all the related documents shall be in English. Any printed literature furnished by the tenderer may be in another language so long as it is accompanied by an English translation of its pertinent passages. Unit measurements shall be metric in accordance with International System. All correspondence between the tenderer and NIBM shall also be in English.

3.2 EARNEST AND SECURITY MONEY

3.2.1 The tenderer shall furnish earnest money as mentioned in the „Particulars of Tender in the form of DD/ Bank guarantee from any nationalized bank pledged in favour of Director, , Pune , as a part of his tender. The bank guarantee should be valid for a period of 120 days beyond the validity of offer. Tenders without EMD shall be rejected by NIBM as being non-responsive. The No interest shall be paid by NIBM on the amount of earnest money deposit.

3.2.2 The earnest money may be forfeited:-

- a) If a tenderer withdraws his tender during the specified period of validity of offer.
- b) If the successful tenderer fails to sign the contract agreement within stipulated period.

3.2.3 The earnest money of the successful lowest tenderer shall be released at the time of signing of the agreement with NIBM. At this time, the tenderer shall have to deposit security money amounting to 5% of the contract value in the form of DD/ Bank guarantee from any nationalized bank pledged in favour of Director, NIBM, Pune . The bank guarantee should be valid for a period of 12 months. No interest shall be paid by NIBM on the amount of security money deposit.

3.2.4 The earnest money of all other unsuccessful tenderers shall be released after receiving confirmation of acceptance from successful bidder.

3.3 PERIOD OF VALIDITY OF TENDER

3.3.1 Validity of the offer should be Six (06) months from the proposed date of opening of the Technical bid. Tenders without this validity will be rejected.

3.3.2 In exceptional circumstances, may solicit the consent of the tenderers to an extension of the period of validity of offer. The request and the response there of shall be made in writing.

3.4 FORMATS AND SIGNING OF TENDER

3.4.1 The tender must contain the name and places of business of the firm/person/persons participating in the tender and must be signed and sealed by the tenderer with his usual signature. The name and designation of all persons signing the tender document should be written below every the signature. Tender by a partnership firm must be furnished with full name of all partners with a copy of partnership deed.

3.4.2 The original copy of the tender should be typed or written in indelible ink and must be signed with the legal name of the corporation/ company by the President/ Managing Director/ Secretary of the firm or a person duly authorized to bid. In case of authorized person the letter of authorization by written power-of-attorney should be enclosed with the technical bid of the tender. The person or persons signing the tender shall initial all pages of the tender document.

3.4.3 The tender shall contain no interlink actions, erasers or overwriting except as necessary to correct the errors made by the tenderer in the preparation of tender. The person or persons signing the tender shall also sign at all such corrections.

3.5 PRICE AND CURRENCIES

The tenderer shall submit his rates in Indian Rupees only, on the format for Financial Bid attached to this tender document. The rates should include all applicable taxes, duties & surcharges. Once quoted price will not change during contact period.

SECTION 4
SUBMISSION OF TENDER

4.1 SEALING AND MARKING OF TENDER

4.1.1 The tender must be complete in all technical and commercial respect and should contain requisite certificates, drawings, informative literature etc. as required in the tender document.

4.1.2 First sealed envelope (Part-I) should contain cost of the tender document (In case it s downloaded from website), requisite earnest money, brochures, literature and other documents regarding technical specifications. It should be subscribed with TENDER NO. Estate/elect/Hot solar/2018-19 & 'Earnest Money and Technical Bid'.

4.1.3 The complete tender document in original (excluding financial bid) issued by NIBM or downloaded from the website should be submitted by the tenderer in the first envelope (Part- I Technical) after furnishing all the required information on relevant pages. Each page of the tender document should be signed & stamped. Tenders with any type of change or modification in any of the terms/ conditions of this document shall be rejected. If necessary, additional papers may be attached by the tenderer to furnish/ submit the required information.

4.1.4 Second sealed envelope (Part-II) should contain financial bid only. It should be subscribed with TENDER NO. Estate/elect/Hot solar/2018-19 and “Financial bid”. The tenderer should submit his duly signed and stamped financial bid on the financial bid format attached with this tender document, after writing the price only.

4.1.5 Any term/condition proposed by the tenderer in his technical bid which is not in accordance with the terms and conditions of the tender document or any financial conditions, payment terms, rebates etc. mentioned in financial bid shall be considered as a conditional tender and will make the tender invalid.

4.1.6 Both the above sealed envelopes i.e. Part-I and Part-II will be sealed in another one envelope, subscribed with TENDER NO. Estate/elect/Hot solar/2018-19 and „Name of Wok This envelope shall be addressed to the Director,NIBM , Pune.

4.2 DEADLINE FOR SUBMISSION OF TENDER

4.2.1 Tender must be received by till the date & time of submission as specified in tender document.

4.2.2 Any tender received after the specified date & time of submission will be rejected and returned unopened to the tenderer.

SECTION 5

TENDER OPENING AND EVALUATION

5.1 OPENING OF TENDER

The procedure of opening of the tender shall be as under:

5.1.1 First envelop (Part-I) bearing TENDER NO Estate/elect/Hot solar/2018-19 and subscribed 'Earnes Money and technical bid and shall be opened by NIBMs representatives at the time and date mentioned in the „Particulars of Tender , in the presence of tenderers who choose to be present. The financial and technical suitability of offers will be examined by NIBM in detail. If required, clarifications regarding the suitability of the offers will be obtained.

5.1.2 Second envelope (Part-II) bearing TENDER NO. Estate/elect/Hot solar/2018-19 and subscribed "Financial bid" of only those tenderers shall be opened whose technical bid is found responsive, suitable and in accordance with the various requirements of the tender.

5.1. A suitable date for the opening of financial bid shall be announced or shall be communicated to tenderers by letter/ email (Either Mode). To avoid postponement of opening of financial bid, it is in the interest of the tenderers to send their authorized representatives who are well conversant with the tender and competent enough to take decisions on technical and financial matters at the time of opening of bids.

5.2 CLARIFICATIONS REGARDING THE SUBMITTED TENDERS

5.2.1 During the process of evaluation of the tender, may at its discretion ask the tenderer for a clarification of his tender. The request for clarification and the response shall be in writing.

5.2.2 Any query regarding any clarification required by on the information submitted by the tenderer, must be replied by the tenderer within the following time schedule.

- Email query should be replied by Email within 3 days.
- Query by letter must be replied by letter within 7 days of receipt of the letter.

SECTION 6
AWARD OF CONTRACT

6.1 **EVALUATION CRITERION**

The whole work shall be on turn key basis. The tender shall be finalise on the basis of lowest total cost of Solar water heater system including guarantee and AMC as offered by tenderer in his financial bid.

6.2 **NOTIFICATION OF AWARD**

Prior to the expiry of validity period of offer, NIBM will notify the successful tenderer by registered Letter/Email/ Fax that his tender has been accepted.

6.3 **AWARD OF WORK CONTRACT**

6.3.1 Before placement of supply\work orders, an agreement shall be signed between NIBM and the lowest successful tenderer\bidder. Complete work shall ordinarily be awarded to the lowest tenderer only. The denial of the lowest bidder to undertake the whole work shall be treated as breach of contract and NIBM may forfeit EMD/ Security amount submitted by him.

6.4 **RIGHT TO VARY QUANTITIES**

NIBM may increase or decrease the quantity mentioned in the tender notice at the time of award of contract and to split the work among various tenderers without any change in price or other terms and conditions & without assigning any reason thereof.

6.5 **RIGHT TO ACCEPT/REJECT ANY OR ALL TENDERS** .

NIBM reserves all the rights to reject any or all the tenders, accept any tender in total or in part.

6.6 **EXPENSES OF AGREEMENT**

The respective suppliers shall pay all the expenses of stamp duties and other requirements for signing the

PART-3
**GENERAL CONDITIONS OF
CONTRACT**

GENERAL CONDITIONS OF CONTRACT

1. DEFINITIONS

In the deed of contract unless the context otherwise requires:-

1.1 „NIBM shall mean The Director or his representative of „Indian Institute of Tropical Meteorology. Govt. of India with its Head office at Pune Campus, at Pune and shall also include its successors in interest and assignees. The „Contractor shall mean the Firm/ Person (whose tender has been accepted by NIBM) and shall include his legal representatives, successor in interest and assignees.

1.2 The contract shall be for Design, Supply, Installation & Commissioning of Solar Water Heater of 500 x 6 = 3000LPD & 500 x 2 = 1000LPD hostel- 5 building roof top of including 5 Years Warrantee/ Guarantee & AMC and shall be valid till the completion of all related works

1.3 The contractor shall be deemed to have carefully examined all the papers, drawings etc. attach to the contract deed. If he shall have any doubt as the meaning of any portion or any condition(s) /specifications etc.

2. COMPLETION PERIOD

2.1 The completion period of the entire work shall be **one** month after issue of work order. The work shall have to be completed within time and shall be binding on the contractor. In case of any urgency, the contractor may be asked to complete the work even earlier and contractor will be bound to fulfill the requirements.

2.2 In case the contractor fails to execute the said work or related obligations within stipulated time, NIBM will be at liberty to get the work executed from the open market at the risk and cost of the contractor, without calling any tender and without any notice to the contractor. Any additional cost incurred by NIBM during such execution of the work shall be recovered from the contractor.

2.3 If the cost of executing the work as aforesaid shall exceed the balance payments due to the contractor and the contractor fails to make good the „additional cost , NIBM may recover it from the contractor's pending claims against any work in NIBM or in any other lawful manner. All risks & responsibilities related to the execution of the said work and fulfillment of related obligations directly or indirectly connected with the performance of the contract shall be the sole responsibility of contractor.

2.4 The calculation of aforesaid „additional cost will be finalized by the NIBM at its sole discretion. The contractor shall have no right to challenge the mode or amount relating to calculation at any forum. For completion of the work

through any other agency, in case some changes are required in terms and conditions of the contract; the contractor shall not have any right to challenge the decision of NIBM.

3. LIQUIDATED DAMAGES

If the contractor fails to perform the work within the time periods specified in the work orders or within the extended time period if any, NIBM shall without prejudice to its other remedies under the contract, deduct from the contract price as liquidated damage, a sum equivalent to 1% of the price of the un-performed work/ services for each week of delay until actual completion of work, up to a maximum deduction of 10%. Once the maximum is reached, NIBM may consider termination of the contract.

4. PERFORMANCE SECURITY

The amount of the performance security as mentioned in the „Payment Terms shall be forfeited in case of breach of any term or condition by the contractor. If required, the other balance payments may also be forfeited, depending on the liabilities on the part of the contractor.

5. FORCE MAJEURE

5.1 Notwithstanding the provisions of clauses contained in this deed; the contractor shall not be liable for forfeiture of its performance security, liquidated damages, termination for default, if he is unable to fulfill his obligation under this deed due to force majeure circumstances.

5.2 For purpose of this clause, "Force majeure" means an event beyond the control of the contractor and not involving the contractor's fault or negligence and not foreseeable, either in its sovereign or contractual capacity. Such events may include but are not restricted to Acts of God, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes etc. Whether a "Force majeure" situation exists or not, shall be decided by the Director of NIBM, Pune & his decision shall be final and binding on the contractor and all other concerned.

5.3 If a force majeure situation arises, the contractor shall notify NIBM in writing promptly (at the most within 5 days from the date such situation arises). After examining the cases NIBM shall decide and grant suitable addition time for the completion of the work.

5.4 For other justified cases also, not covered under force majeure conditions, NIBM may consider the request of contractor and additional time for completion of work may be granted.

6. QUALITY, WARRANTEE/GUARANTEE AND ANNUAL MAINTENANCE

6.1 The contractor shall warranty the Solar Water heater as per applicable standards of quality. Anything to be furnished shall be new, free from all defects and faults in material and workmanship. The manufacture shall be in accordance with the specified technical parameters and should be of the highest grade and consistent with established and generally accepted standards for material. It shall be in full conformity with the drawing or samples if any and shall operate properly if operable.

6.2 After installation of the Solar Water heater at site, the contractor shall ensure satisfactory performance of the equipment s for a period of time as specified in the scope of work.

6.3 The contractor shall rectify defects developed in the Systems within Warrantee/Guarantee/AMC period promptly. In case the contractor does not rectify the defects within 2 days of the receipt of complaint, NIBM may restore the System in working condition on contractor s expenses.

6.4 Frequent and unjustified delays in rectifying defects may lead to cancellation of the contract, recovery of losses and imposing of additional penalty. In such circumstance NIBM shall have the full liberty to recover the losses/penalty from the contractor pending claims, security deposit or in other law full manner. The amount of losses/penalty shall be decided by Director, NIBM, Pune and will be binding on the contractor.

6.5 The performance of the system installed & commissioned shall be warranted by the bidders for a minimum period of five years from the date of Design supply/commissioning of systems at site. This Warranty shall be for a minimum period of five year from the date of commissioning for the complete system.

6.6 The five year warranty period from the date of commissioning, for which no service/ maintenance charges will be separately paid to the contractor. Warranty Card for the same period must be issued by the Manufacturer/supplier to the beneficiary.

6.7 Preventive maintenance during warranty period, periodical checking of performance of system and servicing and replacement of any spares. All test to check the performance (Capacity as well as temperature of hot water) of the system shall be carried out.

6.8 If the bidder fails to ensure 100% working status during warranty period, penalty will be imposed @ 1% of the cost of the system per week or part thereof for the first instance subject to a maximum limit of 10% of the same value and later on the maintenance shall be done at supplier s risk & cost and security deposit & EMD will also be forfeited.

7. STANDARDS

The goods supplied and works executed under this contract shall confirm to the standards mentioned in the technical specification and where no applicable standard is mentioned, the latest version of Indian Standard Institution or Bureau of Indian Specification shall be applicable.

8. INSPECTION AND TESTS

8.1 NIBM or its duly authorized representatives shall have the right to inspect and /or to test the goods to confirm their quality according to the contract and shall have access to the contractor s works premises and the power to inspect and examine the materials and workmanship of the Solar Water heater at all reasonable times during their manufacture.

8.2 The contractor shall inform NIBM through a written notice regarding any material being ready for testing at least 7 days in advance. The conditions of contract and/or the technical specifications shall specify what inspections and tests shall be conducted by NIBM. All the arrangements of necessary equipments and expenses for such tests shall be on the contractor s account excluding the expenses of the inspector.

NIBM s Inspector, Engineer unless the witnessing of the tests is virtually waived off, will inspect and attend such test within 7 days from the date on which the equipments are notified as being ready for test /inspection.

8.4 NIBM shall within 7 days, give written notice to the contractor, about any objection regarding the quality of the system. The contractor shall either make the necessary modifications to remove the cause of such objection or shall clarify the objections in writing if modifications are not necessary to comply with the contract.

8.5 After satisfactory testing of the systems during inspection, NIBM s Inspector Engineer shall issue of dispatch clearance for the supply of material at site.

8.6 The inspection by NIBM and issue of dispatch instruction there on shall in no way limit the liabilities and responsibilities of the contractor in respect of the agreed and specified quality. Nothing in clause 8 shall in any way relieve the contractor from any Warrantee/ Guarantee or other obligations under this contract.

9. SPARE PARTS

The contractor shall make arrangement to maintain a sufficient stock of essential spares and consumable spare parts to ensure proper maintenance of the system promptly. 5% of total number of tubes should be provided at the time of supply of equipment to NIBM as spares.

10. PACKING FORWARDING

10.1 Contractors, wherever applicable shall properly pack and crate all materials in such a manner as to protect them from deterioration and damage during transportation. The contractor shall be responsible for all damage due to improper packing.

10.2 The contractor shall inform the project ESO, Engineer of NIBM, Pune regarding the probable date of each shipment of materials from his works.

11. TRANSPORTATION

The contractor is required to deliver the goods at various locations as defined in the scope of work.

12. DEMURRAGE WHARFAGE, ETC

All demurrage, wharf age and other expenses incurred due to delayed clearance of the material or any other reason shall be on the account of the contractor.

13. INSURANCE

13.1 The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition; transportation and the expenses shall be borne by the contractor.

13.2 The contractor shall arrange security & storage of their materials to avoid any theft or losses during execution of work. NIBM will, in no case, shall be responsible for providing any security/storage for the materials & equipments lying at site during execution of work. Under the contract contractor shall be responsible for any loss or damage until the systems/ supplies are taken over.

14. LIABILITY FOR ACCIDENTS AND DAMAGES

During the Warrantee/ Guarantee period, the contractor shall assume all responsibilities for direct damages covering all type of accident, injury or property damage caused by manufacturing defects or faulty installation on the systems.

15. DUTIES AND TAXES

The rates/ prices mentioned in the price-schedule include all applicable taxes, duties & surcharges. No additional payments shall be made by NIBM on this account.

16. PATENT RIGHT AND ROYALTIES:

The contractor shall indemnify NIBM against all third party claims of infringement of patent, royalties, trademark or industrial design rights arising from use of the goods supplied/ installed by the contractor or any part thereof.

17. RIGHT TO VARY QUANTITIES

NIBM reserves all the rights to increase or decrease the quantity of goods mentioned in the contract, at the time of placement of orders without any change in price or other terms and conditions.

18. LOCAL CONDITIONS

18.1 It will be imperative on contractor to have full information of all local conditions and factors which may have any effect on the execution of the works. The contractor shall be deemed to have collected all the relevant information regarding the proposed place of works/ site, its local environment, approach road and connectivity etc. and be well acquainted with actual working and other prevailing conditions.

18.2 If required, the contractor should pre-visit the site before starting the work. NIBM shall not entertain any request of contractor for clarifications related to such local conditions and shall bear no responsibility in this regard.

19. TOOLS & TACKLES

The contractor shall provide all necessary tools & tackles for proper execution of work and operation/ maintenance of systems after installation. NIBM shall in no way, responsible for supply of any tools & tackles.

20. TERMINATION FOR DEFAULT

NIBM without prejudice to any other remedy for breach of contract, by written notice of default sent to the contractor, may terminate the contract in whole or in part:

21.1 If the contractor fails to deliver the Services within the allocated time period(s).

21.2 If the contractor fails to perform any other obligation(s) under the contract. However in the event of termination of the contract in part, the contractor shall continue performance of the contract to the extent not terminated.

21. TERMINATION FOR INSOLVENCY

NIBM may at any time terminate the contract by giving written notice to the contractor without compensation to the contractor if he becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to NIBM

22. TERMINATION FOR CONVENIENCE

IITM may vide a written notice sent to the supplier; terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the purchaser's convenience in the interest of NIBM.

23. COMPLETION OF WORK

On completion of the work, the contractor shall submit 3 sets of "As Executed Report" to NIBM which will include photographs, drawings and as executed reports of various systems containing details of installation from the point of view of future maintenance of the installed systems. This report must also contain all Technical Details, Detailed Circuit Diagram of the components of all the system.

24. OTHERS CONDITIONS

24.1 The contractor shall not transfer, assign or sublet the work under this contract or any substantial part thereof to any other party without the prior consent of NIBM in writing.

24.2 NIBM may at any time either stop the work all together or reduce or cut it down by sending notice in writing to the contractor. If the work is stopped all together, the contractor will only be paid for work done and expenses distinctly incurred by him as on preparation or the execution of the work up to the date on which such notice is received by him. The decision of NIBM regarding assessment of such expenses shall be final and binding on the contractor. If the work is cut down, the contractor will not be paid any compensation what to ever for the loss of profit which he might have made if he had been allowed to complete all the work awarded to him.

24.3 Fulfillment of various requirements, not particularly mentioned in the specifications or drawings but necessary for satisfactory and proper completion of the work shall be the contractor's responsibility within the prices offered by him. But additional works beyond the scope and essence of this contract shall be carried out by the contractor as extra items. For such works the rates shall be decided by NIBM and shall be binding on the contractor.

24.4 Work carried out without NIBM's approval shall not be accepted and NIBM shall have rights to get it removed and to recover the cost so incurred from the contractor.

24.5 The contractor shall not display the photographs of the work and not take advantage through publicity of the work without written permission of NIBM.

24.6 The contractor shall not make any other use of any of the documents or information of this contract, except for the purposes of performing the contract.

24.7 NIBM will not be bound by any Power of Attorney granted/ issued by the contractor or by any change in the composition of the firm made during or subsequent to the execution of the contract. However recognition to such Power of Attorney and change (if any) may be given by NIBM after obtaining

proper legal advice, the cost of which will be chargeable to the contractor concerned.

25. STATUTORY ACTS

25.1 All legal formalities/clearances are to be obtained by the contractor regarding the execution of the said work.

25.2 In respect of all labour directly or indirectly employed on the work by the contractor, the contractor shall comply with all the provisions of hiring the contract labour and rules of State/ Central Government or any other authority framed from time to time. The rules and other statutory obligations in this regard will be deemed to be the part of this contract.

25.3 The contractor shall comply with the all the Acts & rules and regulations, laws and by- laws framed by State/ Central Government/ Organization in whose premises the work has to be done. NIBM shall have no liabilities in this regard.

26. APPLICABLE LAW

The contract shall only be interpreted under Indian laws. The station of NIBM Headquarter Pune shall have exclusive jurisdiction in all matters arising under this contract.

27. RESOLUTION OF DISPUTES/ARBITRATION

27.1 The purchaser and the supplier shall make every effort to resolve any disagreement or dispute arising between them under or in connection with the contract, amicably by direct informal negotiation.

27.2 If after thirty (30) days from the commencement of such informal negotiations, the purchasers and the supplier are unable to resolve a contract dispute amicably; the matter may be referred in writing by either party to the sole arbitration of the Director of NIBM Pune or to a person nominated by him.

27.3 Subject to aforesaid, the arbitration and conciliation Act 1996 and rules made thereafter or any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings. Under this cause, the „Award given by the Arbitrator shall be binding on all the parties. The contractor shall not have right to challenge the Award.

27.4 Work under the contract shall if reasonably possible, continue during the arbitration proceedings and dues if any, payable by NIBM to the contractor with respect to the work not in dispute shall not ordinarily be withheld on account of such proceedings unless it becomes necessary to withhold the same.

27.5 The proceedings, if any, in relation to the arbitration referred to above, shall be held by the arbitrator aforesaid at Pune and courts at Pune shall have jurisdiction to entertain and decide the matter involved.

27.6 No decision given by the officer in charge of the work under this contract, in accordance with the forgoing provisions shall disqualify him as being called as a witness or giving evidence before the arbitrators on any matter whatsoever relevant to the dispute of difference referred to the arbitrator as aforesaid.

27.7 In case during the Arbitration proceedings the appointed Arbitrator becomes unable, due to any reason whatsoever, to continue with the proceedings or making of Award; it will be prerogative of NIBM to nominate any other person as sole Arbitrator instead thereof. The contractor shall not raise any objection to such appointment having been made by NIBM.

27.8 The High court of Pune or Courts subordinate at Pune to it as the case may be, shall alone have jurisdictions to the exclusion of all other courts.

28. NOTICES

29.1 Any notice to be given by one party to the other, pursuant to the contract shall be sent in writing. A notice shall be effective when delivered or from the effective date mentioned in the notice, whichever is later.

29.2 Notices, statements and other communications sent by NIBM to the contractor at his specified addresses through registered post/ email/ fax shall be deemed to be delivered to the contractor.

29. APPLICATION

These general conditions shall apply to the extent that provisions in other parts of the contract do not supersede them.

30. PAYMENT TERMS

30.1 70% against delivery of material at site against invoice\Delivery challan

30.2 20% of contact value against satisfactory installation and commissioning of system

Note

b) Balance 10% of the contract value shall be paid after completion of guarantee period (Five year s Warrantee/Guarantee). This amount shall be released on submission of bank guarantee valid for 63 months from the date of erection and commissioning of systems at site.

1. No price escalation due to any reason (including any change in the applicable taxes, duties, surcharge etc.) shall be considered by NIBM during the validity/ extended validity of the contract agreement
2. All the bank guarantees should be made from nationalized bank.

PART-4

GENERAL TECHNICAL SPECIFICATIONS

The details of these Standards which contain minimum performance requirements along with test methods are as follows:

1. REFERENCES

IS 6392:1971 Steel pipe flanges

IS 6911: 1992 Stainless steel plate, sheet and strip –specification

IS/ ISO 9488:1999 Solar energy – Vocabulary

MNRE STD 01:2013 All glass (glass in glass) evacuated solar collector tubes

MNRE STD 02:2013 Storage water tank for all glass (glass in glass) evacuated tubes solar collector

DOC: MED 04(1050) F Test procedure for thermo syphon type domestic solar hot water heating systems (under print) -Specification, Part 5 -Test methods.

2. MNRE Specifications for Test Procedure

Test procedure for Thermo-siphon-type domestic solar Hot Water Systems Available on MNRE website www.mnre.gov.in should be followed.

**TECHNICAL SPECIFICATIONS &
TERMS AND CONDITIONS
FOR
SOLAR WATER HEATER (FPC/ETC)**

Prepared By

**Committee for Technology Assessment and
Analysing the Installation of Solar Water Heater
Systems in Government House/Buildings**

TERMS AND CONDITIONS

1. The manufacturer shall supply all technical literature and drawing considered necessary for the installation, operation and maintenance of the equipment and its fittings. These shall essentially include:-
 - a) Drawing showing over all dimensions and all other details including sectional view of the equipments.
 - b) List of parts with reference to nos.
 - c) Manual of instructions for the operation, maintenance and repairs/equipment and special fittings, if any.
 - d) Checking methods and schedule for cleaning the system.
 - e) Any other relevant technical data which would be of assistance for efficient operation and maintenance of the system including energy savings etc.
2. The tender should be selected on the basis of average annual financial turn over which should be at least 50% of estimated cost during last three consecutive financial years and also on the basis of minimum one work done of the 80% or two works of each 60% value put to tender
3. The supplier shall train purchaser's personnel for the operation and maintenance of the equipment for a particular period, mutually agreed between the supplier and the customer.
4. The suppliers will have to undertake repair of the system installed by them, in case of any defect arising out of any point of time. Supplier will attend the minor complaints within 48 hours of receiving the complaint otherwise penalty to be recovered per day as decided by the Engineer-in-charge.
5. The system and the solar collectors should be guaranteed for six year after the day of handing over. This include first three year with spare parts and next three year without spare parts. He/She shall submit list for recommended spars to be required in maintenance with price along with their offer. Manufacturer or their authority/accredited dealer shall be consider for eligibility to participate in tenders.
6. The supplier shall guarantee the performance of the system for the rated output of 60 degree C in terms of quantity of hot water and the temperature in peak winter for which the system is designed. If it is not achieved, the necessary additions/modifications including installation of extra collectors shall be done by the supplier without charging any extra price. However, the purchaser reserves the right to have this job completed for achieving the rated output by other manufacturers/after serving 15days notice to the original manufacturers/contracts at his cost & risk.
7. All the elements of the system which fail due to manufacturing defect within the period of guarantee shall be replaced by the tenderer free of cost. 8. An amount of 10% of the total cost of the system will have to be deposited by contractor, as security which will be reimbursable after 6 years i.e. completion of warranty period.

Note: - These terms & conditions will be in addition to already exiting terms & conditions of the concerned Department.

TECHNICAL SPECIFICATINS
FOR SOLAR WATER HEATER (FPC/ETC)

<p>1. Solar flat plate collector components</p>	<p>Solar flat plate collector cover plate made of toughened glass. Sheet for absorber made of copper. Absorber made of copper sheet and copper tube.</p>
<p>2. Solar flat plate collector specifications</p>	<p>1. Solar flat plate collector shall conform to IS 12933 (part1) with amdt no.1 & 2.</p> <p>2. and IS : 12933 (part 2)/2003 and various components shall be as under:-</p> <p>a) Cover plate: cover plate shall be toughened glass and thickness of 4.0 mm (min) conforming to section -1 of IS: 12933(pt-2)/2003 the solar transmittances of the cover plate shall be minimum 82 percent at near normal incidence</p> <p>b) Collector box: collector box shall be made of aluminum Sections only type grade, size, workmanship and finish of the material used shall be as per section-2 of IS: 12933 (pt-2)/2003: the minimum thickness of aluminum shall be as under:</p> <ol style="list-style-type: none"> 1. Channel section for sides 1.6 mm 2. Sheet for bottom 0.7 mm 3. Support for glass retaining 1.2 mm 4. Sheet for entire body 1.0 mm
<p>a) Absorber</p>	<p>Absorber Shall Consist of riser, Header and Sheet for absorber. The Diameter of header shall be 25.4 + /-0.5mm and thickness 0.71mm. The Diameter of riser shall be 12.7 + /-0.5 mm and thickness 0.56mm and made of copper only. The distance between the risers from center to center shall be 120mm. type grade, size , workmanship and finish of thematerial used shall be as per section- 3 of IS : 12933 (pt -2)/2003.</p> <ol style="list-style-type: none"> 1. Riser and header assembly designed for working pressure up 24.5 k pa (2.5 kg/ cm square) shall be tested for leakage at a minimum hydraulic pressure of 490 k pa (5 kg/cm square). <p>(a) Sheet for absorber: sheet for absorber shall be made of copper only. Type Grade, size, workmanship and finis of the material used shall be per Section -3 of IS: 12933 (pt -2) /2003. A sample piece of the absorber for Having minimum area of 400 square cm. shall be heated in an oven at Temperature of 175 degree c for 2 hours. After heating, the sample shall be taken out from the oven and cooled at room temperature. The Cooled sample shall be inspected visually for damages, if any.</p>

	There Shall not be any appearance of blistering / rupture / peeling off of the Coated /painted surface and of weakening of the bonding between.
b) Absorber sheet and risers/ headers	<p>(a) Collector box insulation shall be provided at back and sides. Thermal resistance (R) of insulation material shall be minimum 0.96 m square degree c/w for back insulation and minimum 0.48 m square degree c/w for side insulation. This shall be derived after determining thermal conductivity (k) value at 100 degree c mean temperature in accordance with IS: 3346. Collector box insulation shall conform to sec. 4 of IS 12933 (pt – 2) / 2003.</p> <p>(b) Gaskets and grommets: gaskets and grommets shall conform to Sec. 5 of IS 12933 (pt-2)/ 2003.</p>
3. ASSEMBLY OF COLLECTORS	<p>The load of the absorber should not be on the insulation. It should be taken by the collector box. The air gap between the glazing and the absorber should be 25mm (+5mm). Insulation should not be allowed to slide. Glazing shall be fixed on the collector box by using EPDM/Neoprene/Synthetic rubber channels. The glass should be firmly held, without strain taking into account the expansions of glass. A typical example is by retaining the glazing with the help of self tapping screws and aluminum angle retainer of dimensions 25 mmx25mmx1.5mm fixed on the top of the box it shall be ensured that the screws are not touching the glass edge. Top surface along the edge between the glass and the aluminum angle shall be caulked with suitable sealants such as zinc oxide based/rubber based/silicon rubber based or polysulphide rubber sealants.</p>
4. SOLAR EVACUATED TUBES COLLECTOR SPECIFICATIONS (ETC COLLECTORS SHOULD BE APPROVED FROM MNRE)	<p>1. Inner tank Material a) Stainless Steel SS 316 b) SS304-2B (22SWG)</p> <p>2. Hot water tank insulation density a) High Density injected PUF insulation: 50mm, b) High des PUF (poly urethane foam) Installation of 50mm thickness between inner outer tank ensures maximum heat retention ever season (maximum up to 72 hours).</p> <p>3. Tank Stand and supports a) Mild Steel with suitable anti corrosive coating.</p> <p>4. Working pressure of the system a) Normal, Gravity Feed, Less than 1 Kg/cm². b) Recommended Operating Pressure:10 Bars.</p> <p>5. Tank test Pressure a) Factory Pressure Tested for 2 Kgs/Cm².</p> <p>6. Solar Evacuated tube dimension a) Double walled glass Outer Tube Dia 47+0.7mm, Tube</p>

	<p>length-1500+5mm. & Inner Diameter: 33.4mm. b) Thickness of tube at least 1.60 mm.</p> <p>7. Tube assembling frame a) Mild steel section with PP coating.</p> <p>8. Tube assembling frame size a) Length-2.10mtrs. Width-3.20mtrs, Height-1.50mtrs.</p> <p>9. Cold water tank a) 2.4 mtrs. From the terrace level.</p> <p>10. Backup Provide a) Electrical heaters: - 03 KW with thermostat</p> <p>11. Tube coating a) Copper coated tubes with selective absorptive coating Graded Al-N.</p>																		
5. GASKET FOR FLANGES	3 mm thick gasket of Neoprene/synthetic rubber gasket shall be used for sealing the joints between flanges.																		
6. COLLECTOR SUPPORT FRAME	The structure should be in a position of withstand a wind velocity of 100 kms/hr. shall be made with angle iron of 35mmx35mmx4mm; will have vertical support at top and bottom edge of the inclined plane of the collector at a distance of 1.5 M or less. The vertical support shall be firmly grouted with the roof.																		
7. PAINTING OF STANDS	Proper cleaning and degreasing of the surface should be done with the help of three in one Solution before painting. Two coats of zinc chromate red oxide primer shall be applied followed by two coats of enamel paint of suitable Colour as per NIT.																		
8. STORAGE TANK(HOT WATER	a) Material Stainless Steel (SS 316/ IS 1730 grade)																		
	<p>b) Thickness</p> <table> <tr> <td>20 gauge</td> <td>(0.91mm)for 100 lpd</td> </tr> <tr> <td>20 gauge</td> <td>(0.91mm)for 200 lpd</td> </tr> <tr> <td>20 gauge</td> <td>(0.91mm)for 500 lpd</td> </tr> <tr> <td>18 gauge</td> <td>(1.2mm) for 1000 lpd</td> </tr> <tr> <td>18 gauge</td> <td>(1.2mm) for 1500 lpd</td> </tr> <tr> <td>18 gauge</td> <td>(1.6mm) for 2000 lpd</td> </tr> <tr> <td>16 gauge</td> <td>(1.6mm) for 3000 lpd</td> </tr> <tr> <td>16 gauge</td> <td>(2.0mm) for 4000 lpd</td> </tr> <tr> <td>16 gauge</td> <td>(2.0mm) for 5000 lpd</td> </tr> </table>	20 gauge	(0.91mm)for 100 lpd	20 gauge	(0.91mm)for 200 lpd	20 gauge	(0.91mm)for 500 lpd	18 gauge	(1.2mm) for 1000 lpd	18 gauge	(1.2mm) for 1500 lpd	18 gauge	(1.6mm) for 2000 lpd	16 gauge	(1.6mm) for 3000 lpd	16 gauge	(2.0mm) for 4000 lpd	16 gauge	(2.0mm) for 5000 lpd
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	<p>c) Insulation and installation</p> <p>All sockets and internal fittings of the tanks should be of stainless steel.100 mm thick insulation of 48 kg/cu.m. density having approx. k value_0.03 W/mk and R value 3.34 sq.m deg.C/W to withstand a temp. of 250deg.c.Thin polythene sheet shall be used as covering between the glass wool and the cladding sheet besides the retaining</p>																		

	<p>material such as chicken mesh etc. Aluminum sheet of thickness 24 SWG shall be used for cladding the tank insulation.</p> <p>The storage tank shall be properly installed at site using enameled coated appropriate size angle iron stands, girder, cement concrete pedestals of 1:2:3 ratio or any other specific provision suitable to site. To ensure the stability against heavy storm etc. but not less than 1'x1'x6" dimensions. External of the tank should be properly insulated so that hot water temperature does not decrease by more than 5 deg.C in about 16 hrs. Times.</p>
9. PIPING	<p>a) Material Medium class (B class) GI as per IS 1239 shall be used for piping.</p> <p>b) Insulation 25mm thick insulation of 48kg/cu.m. density and K value+0.03 W/MK R value+1.67 sq.m. C/W to withstand and temp. of 250 deg. C be used.</p> <p>Thin plastic sheet shall be used as covering between glass wool and aluminum cladding besides other retaining material like chicken mesh etc. 26 SWG thick aluminium sheet shall be used for cladding the insulated pipe. The pipe line should be properly supported and fixed with clamp with the help of suitable size stand/civil structure (cement concrete ratio 1:4) ISI mark strainer of standard make should be fitted in the main cold water supply line before the system.</p>
10. VALVES/NIPPLE/TESS/BENDS	<p>Gun metal valve ISI marked shall be used. Nipple/tees and bends of ISI marked of medium class GI (B class) shall be used. Air vents in each row are to be provided.</p>
11. INSTRUMENTATION	<p>Temperature gauge: 1 No. (for Hot Water Storage Tank/Outlet) Gun metal strainer: 1 No. (at Cold Water inlet) Water meter -1 at the inlet of cold water tank. Maximum 2 nos. Of chrome plated brass taps for systems up to 200 LPD thereafter 1 tap per 200 LPD superior qualities for distribution line.</p>
12.COLDWATER TANK	<p>HDPE/LDPE material with Gun metal float valve (ISI marked) equal to the capacity of Hot water storage tank.</p>
13.STANDS & PEDESTALS FOR THE TANKS	<p>The tanks will be mounted on stands made out of angle iron frame of 35x35x4mm up to 2000 liters and 65x65x6mm for capacity above 2000 liters with each leg duly grouted with PCC 1:2:4 of 1'x1'x1'size.</p> <p>The cold water tanks will be placed over angle iron frame having 4 cross members in 4 legs with 5mm thick MS sheet for full bottom support fixed of 4 horizontal members based on the size of the cold water tank.</p>
14. SYSTEM LAYOUT & DESIGN	<p>Maximum number of collectors in series should not be more than ten. Maximum number of collectors in parallel in one row without the use of any piping connections should not be more than six.</p>

	<p>Air venting at appropriate places without hindrance of a spring loaded valve to prevent air locking in the system should be provided. For this purpose, the system shall have, at a suitable point, atmospheric pressure conditions preferably in the high temperature zone.</p> <p>System shall have a suitable expansion/make up tank at a high point in the system to ensure that collectors run full all the times. Capacity of this expansion/make up tank should be 1.5% of the system capacity for all systems.</p>
<p>15.HEAT EXCHANGER</p>	<p>(a) Shell-in-Tube Type</p> <p>(i) Material</p> <p>Copper for forced systems only.</p> <p>Shell in tube type heat exchanger may be used if U-type construction is not employed and if V-type construction is employed, then minimum 4 Nos. of heat exchangers will be used in series. Shell shall be designed for 1.5 times of the designed operating pressure and shall be tested for two times the operating pressure. In case of mild steel shell, corrosion allowance of 1.6 mm shall be provided. Shell shall be designed as per the BIS-2825. All the elements of heat exchanger shall be as per relevant Indian Standard or as per TEMA Class C construction.</p> <p>(ii) Tube Thickness</p> <p>Minimum 22 SWG, but may be higher depending upon the designed pressure requirements.</p> <p>(b) Coil-type Heat Exchanger</p> <p>For thermosyphen systems only. May be used by incorporating Cu/SS coils/retender inside the storage tank.</p> <p>(i) Material Copper/SS tube of ¾” dia.</p> <p>(ii) Thickness Minimum 22 SWG. May be higher depending upon the pressure requirements.</p> <p>(iii) No. of coils and flow Pattern. Shall be so designed to ensure the pressure drop less than 0.3 kg/cm. The surface area of the heat exchanger should not be less an per sq.m of the absorber area of the system (for 100 LPD system the copper tube length of 7 meter is required).</p>
<p>16. ELECTRICAL B ACK UP (only upto 1000 lpd)</p>	<p>For 100 lpd - 2 KW For 200 lpd- 2 KW For 300 lpd- 2x2 KW For 400 lpd- 2x2 KW For 500 lpd- 2x2 KW</p>

	<p>Electrical wiring of 2:5 mm sq. 2 core unarmored cable, thermostat of Siemens/Danfoss/Honeywell Make with MCB of 16 Amp. For 600 lpd-6 KW For 800 lpd-9 KW For 1000 lpd-9 KW</p>														
<p>17. ELECTRICAL BACK UP CONTROL PANEL FOR 6 KW</p>	<table border="0"> <tr> <td data-bbox="618 386 1052 428">1. DP switches 20 Amp.</td> <td data-bbox="1052 386 1552 428">Anchor make or equivalent</td> </tr> <tr> <td data-bbox="618 428 1052 512">2. MCCB 4 pole 16 Amp For 6KW and 32 Amp for 9 KW</td> <td data-bbox="1052 428 1552 512">Legarand, Schneider, L&T, Siemens, ABB make.</td> </tr> <tr> <td data-bbox="618 512 1052 554">3. Contactor 25-32 Amp.</td> <td data-bbox="1052 512 1552 554">L&T/Schneider/Siemens make</td> </tr> <tr> <td data-bbox="618 554 1052 596">4. Amp. Meter 1x30Amps.</td> <td data-bbox="1052 554 1552 596">Rishabh,AE,L&T</td> </tr> <tr> <td data-bbox="618 596 1052 638">5. Volt meter 0-500V</td> <td data-bbox="1052 596 1552 638">-do-</td> </tr> <tr> <td data-bbox="618 638 1052 701">6. Amp. Selector Switch</td> <td data-bbox="1052 638 1552 701">AE/Rishabh/ KAAYCEE, L&T BCH,GE</td> </tr> <tr> <td data-bbox="618 701 1052 739">7. Voltage Selector Switch</td> <td data-bbox="1052 701 1552 739">-do-</td> </tr> </table>	1. DP switches 20 Amp.	Anchor make or equivalent	2. MCCB 4 pole 16 Amp For 6KW and 32 Amp for 9 KW	Legarand, Schneider, L&T, Siemens, ABB make.	3. Contactor 25-32 Amp.	L&T/Schneider/Siemens make	4. Amp. Meter 1x30Amps.	Rishabh,AE,L&T	5. Volt meter 0-500V	-do-	6. Amp. Selector Switch	AE/Rishabh/ KAAYCEE, L&T BCH,GE	7. Voltage Selector Switch	-do-
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PART-5

SCOPE OF WORK

PART 5
SCOPE OF WORK

The work shall include Design, Fabrication, Manufacturing, Supply, Installation, Testing & Commissioning of 500LPD X6 =3000LPD & 500LPD X2 =1000 LPD capacity Solar Water Heater on turnkey basis in accordance with the technical specifications, at Executive -5 hostel in NIBM Campus Pune in Dist.-Pune . Executive hostel building is ground floor plus two storey bldg with 4 wings. Down comer work of pipeline is also included.

Sl	System Details	Qty.	Proposed of Use
1	EVACUATED TUBE type Solar water heater system 500 x6 = 3000 & 500 x 2 = 1000LPD Two systems , WITH SERIES &PARALLEL CONNECTION	Two systems.	For Hot water for bathing in Hostel rooms.

Scope of works shall include:

- A.) All works required for proper installation of Solar Water Heater shall be done by the contractor. The entire work shall be performed on turnkey basis. All the works related to the proper installation and functioning of the systems shall have to be carried out by the contractor in the prices offered by him.
- B.) Civil works /welding works related to foundation of mounting structure of the system shall be done by the contractor.
- C.) All the required hot and cold water pipe lines shall be executed by the contractor for which additional payments shall be made at the rates offered by him.
- D.) The complete Solar Water Heater shall be warranted by the contractor against any manufacturing/ design/ installation defects for a minimum period of 5 years from the date of installation and commissioning.
- E.) The contractor will be responsible for satisfactory performance, operation & regular maintenance of the Solar Water Heaters for a period of 5 years from the date of commissioning. All the necessary arrangements required in this regard during 5 year s period shall be made by the contractor.
- F.) Rectification of all the defects developed in the Solar Water Heater during Warrantee/Guarantee period 5 years shall have to be done by the contractor promptly, at the most within 2 days from the date of receipt of compliant.
- G.) AMC will include rectification /replacement of all the defective and consumable components/items including batteries. During Warrantee/Guarantee and AMC period, all the arrangements for keeping all the Solar Water Heater functional shall be the sole responsibility of the contractor.

H.) After completion of the proposed works, clearances of all temporary works/ 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.) General Aesthetics & cleanliness in regard to the installation of various systems shall have to be maintained.

J.) Supply and Installation of Display board showing all technical information of Solar Water Heater. The matter written on these boards shall be finalized with NIBM,Pune .

K.) All the non functional parts/ materials/ items replaced during the Warrantee/Guarantee and AMC period shall be the property of the contractor.

L.) The contractor will conduct on-site training of the purchaser s/user s personnel regarding the assembly, start-up, operation, maintenance and repairs of the Solar Water Heater.

M.) During Warrantee/Guarantee and AMC period, the contractor shall have to submit annual performance report from user agency regarding functionality of the system.

N.) Back up heater pockets for 03 KW three coils for each tank with electrical panel etc to be installed with appropriate size elect cable switchgear units etc to be provided. With standard enclosure.Complete ready to use back up system to be provided.

PART-6

TECHNICAL BID

PART – 6
TECHNICAL BID

DETAILS OF EXPERIENCE

Please fill in information About Solar Water Heater installed in last three years.

Details	Year		
	(13-14) Installed	(14-15) Installed	(15-18) Installed
Solar Water Heater (LPD)			
Total value of the work			

(Signature of Tenderer) Seal

- NOTE:** 1. Above details without copies of work orders, completion certificates and satisfactory performance reports from the users will not be considered.

PART-7

FINANCIAL BID

NATIONAL INSTITUTE OF BANK MANAGEMENT, PUNE

QUOTATION FROM

Sub : ETC Hot Water Solar System Design Supply and Installation
(a) 3000 LPD and (b) 1000 LPD

Item No	Description	Quantity	Rate (Rs.)	Amount. Rs.	Remark
1	<p>3000 LPD Solar water heating system ETC type Stand alone models of 500 litres. Each with MNRE approved ETC tubes of 58 x 2100 mm OR 70 x 2100 mm. For bathing application with 0.5 mm stainless steel (grade 304) hot water storage tank with back up heater pockets (3 Nos.) to accommodate 3 KW heater elements 3 KW x 1 1/4 check nut with Thermostat pocket etc. couple with all manifolds. Manifold with brass material. the entire system shall be connected with cold/hot water connectivity as per standard design. Insulation fibre wool or Puf material etc. complete system designed by the supplier and approved by MNRE or State Govt. Solar energy Dept. approved system. All ETC Tubes manufactured by Bosh / Tata BP Solar / Honey Well approved . Appropriate approval documents needs to be enclosed with this part of Tender document. 500 litres systems to be connected in series and parallel so that sufficient hot water available for 24 hours for hostel needs.</p> <p>Please refer full tender document, MNRE standard draft enclosed which part of this tender. The system needs to be supplied along with back up heaters assemble along with electrical control panel etc. complete system.</p>	<p>500 LPD X 6 Nos = 3000 LPD one system</p>			
2	<p><u>SAME AS ABOVE</u> But the size of the system will be 1000 litres capacity. ETC type stand alone system of 500 litres capacity with MNRE approved ETC tubes of etc. 500 LPD two systems to be connected in series. The system will be used for the kitchen area of hostel for cleaning of utensils etc. Appropriate storage tank stainless steel as per MNRE enclosed draft standards.</p>	<p>500 LPD X 2 Nos. =1000LPD.one system</p>			

Item No	Description	Quantity	Rate (Rs.)	Amount. Rs.	Remark
3	<u>OTHER COMPONENTS</u>				
(a)	Composite pipes 1.25" Ø	120 M			
(b)	Composite pipes 1" Ø	30 M			
(c)	Composite pipes ¾" Ø	30 M			
(d)	Composite pipes ½" Ø	30 M			
(e)	Venting through G I pipes ½" 'C' Class	60 M			
(f)	Ball Valve - 3000 LPD System (500 LPD x 6 Nos.) 1000 LPD System (500 LPD x 2 Nos.)	06 Nos. 01 No.			
(g)	NRV Valve Brass Make 1.25" (Appropriate Quantity)	04 Nos.			
(h)	NRV Valve ½" Brass Make (Appropriate Quantity)	36 Nos.			
4	Cold water storage tanks. Existing cold water storage tank to be used. The existing cold water storage stand to be strengthening and two coat of enamel paint finishing with black colour	2 Nos.	Lump Sum		
5	Transpiration to NIBM site lifting, installation, testing and commissioning of the entire system within 15 days time of purchase order acceptance.				
6	GST and allied taxes with detailed break-up				
7	Net Cost of Two Systems				
8	Existing hot water Solar system as is where is basis. All the scrap tank, panels, pipes etc. discarded material to be removed from NIBM Campus within 5 days time from erection & commissioning of the new system if not cleared debris & shifted outside campus an amount of Rs 5000.00 will be recovered from your bills.				
9	Buy back cost of scrapped old solar system		Lump sum		

Note : 1) As per your design if quantity varies, you may quote accordingly.

2) Please visit NIBM Campus & Inspect the site take measurements and submit quotation.

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1. The per meter rates for pipe line include of all required accessories such as NRV, gate valves/nipple/tees/bends/taps etc as defined in technical specifications of this tender document & are in accordance with the specifications & various terms & conditions mentioned in the tender document.
2. The above cost of pipe line is being given for the specified tentative lengths, for the purpose of comparison of offers. However the work shall be done for actual required length at site on the above rates of pipeline and quote accordingly.
3. The rates are inclusive of all taxes and duties what so ever.
4. AMC will be awarded only after successful completion of 5 year with satisfactory services.

(Signature of Tenderer) Seal

FORMAT FOR BANK GUARANTEE FOR – EARNEST MONEY DEPOSIT

This deed of Guarantee made on day of Month & Year by Name & Address of the bank (hereinafter called the „GUARANTOR) on the one part, on behalf of M/s Name & address of the Firm (hereinafter called the „Firm)) in favour of Director, National Institute of Bank Management (NIBM), Pune (hereinafter called „NIBM) on the other part, on the following terms and conditions.

Whereas the FIRM is submitting its tender forand this guarantee is being made for the purpose of submission of Earnest money deposit with the tender document.

Know all people by these presents that the GUARANTOR, hereby undertake to indemnify and keep NIBM indemnified up to the extent of Rs.....during the validity of this bank guarantee and authorize NIBM to recover the same directly from the GUARANTOR. This bank guarantee herein contained shall remain in full force and effect till the expiry of its validity or till any extended period (if extended by the bank on receiving instructions from FIRM.). The liability under the guarantee shall be binding on the GUARANTOR or its successors.

Whereas the GUARANTOR further agrees that their liability under this guarantee shall not be affected by any reason of any change in the offer or its terms and conditions between the FIRM and NIBM with or without the consent or knowledge of the GUARANTOR.

Whereas the GUARANTOR further agrees to pay guaranteed amount hereby under or part thereof, on receipt of first written demand whenever placed by NIBM during the currency period of this guarantee. The GUARANTOR shall pay NIBM immediately without any question, demure, reservation or correspondence.

Whereas the GUARANTOR hereby agrees not to revoke this guarantee bond during its currency period except with the previous consent of NIBM in writing.

Notwithstanding anything contained herein-

- 1 Our liability under this bank guarantee shall not exceed Rs.
- 2 This Bank guarantee shall be valid up to
- 3 We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only against the written claim or demand on or before

Sealed with the common seal of the bank on thisday of Month and Year

Witness

1..... (Signature and seal of the bank)

2.....

FORMAT FOR BANK GUARANTEE FOR -PERFORMANCE SECURITY

This deed of Guarantee made on day of Month & Year by Name & Address of the bank (hereinafter called the „GUARANTOR) on the one part, on behalf of M/s Name & address of the Firm (hereinafter called the „FIRM)) in favour of Director, National Institute of Bank Management (NIBM), Pune (hereinafter called “ NIBM) on the other part, on the following terms and conditions.

Whereas the FIRM has executed Solar Water Heater System under Agreement No..... between FIRM & NIBM and whereas in pursuance of the terms of the agreement, NIBM having agreed to pay the amount for performance security against bank guarantee, this guarantee is being made for the purpose of release of the performance security amount.

Know all people by these presents that the GUARANTOR, hereby undertake to indemnify and keep NIBM indemnified up to the extent of Rs.....during the validity of this bank guarantee and authorize NIBM to recover the same directly from the GUARANTOR. This bank guarantee herein contained shall remain in full force and effect till the expiry of its validity or till any extended period (if extended by the bank on receiving instructions from FIRM.). The liability under the guarantee shall be binding on the GUARANTOR or its successors.

Whereas the GUARANTOR further agrees that their liability under this guarantee shall not be affected by any reason of any change in the offer or its terms and conditions between the FIRM and NIBM with or without the consent or knowledge of the GUARANTOR.

Whereas the GUARANTOR further agrees to pay guaranteed amount hereby under or part thereof, on receipt of first written demand whenever placed by NIBM during the currency period of this guarantee. The GUARANTOR shall pay NIBM immediately without any question, demure, reservation or correspondence.

Whereas the GUARANTOR hereby agrees not to revoke this guarantee bond during its currency period except with the previous consent of NIBM in writing.

Notwithstanding anything contained herein-

- 1 Our liability under this bank guarantee shall not exceed Rs.
- 2 This Bank guarantee shall be valid up to
- 3 We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only against the written claim or demand on or before

Sealed with the common seal of the bank on thisday of Month and Year

Witness

1.....

(Signature and seal of the bank)

2.....