

**National Bank Staff College (NBSC), Lucknow**

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**Tender for Supply, Installation, Testing, Commissioning and Maintenance of Solar Water Heating System at NBSC Campus, Sector-H, L.D.A. Colony, Kanpur Road, Lucknow - 226 012**

**PART I (TECHNICAL BID)**

**SCHEDULE OF TENDER :**

- i. Tender document will be available from 21/11/2011 to 07/12/2011**
- ii. Submission of Tender by 1500 hrs on 07/12/2011**
- iii. Pre-tender meeting on 02/12/2011, 1000 hrs.**
- iv. Opening of Part-I (Qualifying bid) - 1600 hrs on 07/12/2011**

## **NOTICE INVITING TENDERS**

### **Invitation to bid for the Supply, Installation, Testing, Commissioning and Maintenance of Solar Water Heating (SWH) System at NBSC Campus, Sector-H, LDA Colony, Kanpur Road, Lucknow**

1. On behalf of National Bank Staff College, we have the pleasure of inviting you to tender for the aforesaid work.

#### **2. Eligibility Criteria**

Bidders having experience in undertaking similar nature of work and fulfilling the following **eligibility criteria** only need tender for the work:

a) The tenderer must either be the Original Equipment manufacturer (OEM) of solar water heating system duly approved by Ministry of New and Renewable Energy (MNRE), Govt. of India & BIS (copy of certificate required in support) or an authorised dealer of such OEM, for supply and maintenance of Solar Water Heating Systems. Supporting authentic documents are to be provided in support of this requirement such as previous year's production data and certificate of manufacturing capacity issued by govt. agency such as MNRE/BIS/DGS&D.

b) The Bidder shall be a profitable registered company involved in the Supply, installation, commissioning and maintenance of SWHS

c) The Tenderer should have at least one **technical maintenance and support base for post installation services facilities in Lucknow**, the details of which should be enclosed.

d) Average Annual financial turnover during the last 3 years, ending 31st March of the previous financial year, should be at least 300% of the estimated cost i.e. **Average annual financial turnover ending 31 March 2011 should be at least Rs.9,90,000/-**.

e) The Bidder must have executed during the preceding 7 years at least three similar works costing not less than the amount equal to 40% of the estimated cost i.e. Three similar works each Rs 1,32,000/- each

**OR**

Two similar works costing not less than the amount equal to 50% of the estimated cost i.e. Two similar works costing Rs 1,65,000/- each

**OR**

One similar work costing not less than the amount equal to 80% of the estimated cost i.e. One similar work costing Rs 2,64,000/-

f) The Solar Water Heating Systems must be installed with Solar Collectors approved by BIS. An undertaking to this effect shall be furnished by the tenderer.

#### **3. Bidding Process**

The bidding will be a two stage bidding process and each bidder will submit two envelopes as indicated below:

##### **1.Envelope 1 -- Technical Bid**

This envelope must contain the following :

a) Proof pertaining to the eligibility of the Bidder i.e. copies of the income tax returns for the preceding three years (i.e. for the years 2010-11,2009-10 and 2008-09), copies of the work order

and work completion certificates in respect of similar work executed (indicating nature of work, contract amount and duration) from clients during the last seven years (prior to 31.03.2011) of value as indicated in the eligibility criteria, Copy issued by MNRE/BIS, Copy of the registration of the firm/company and copy of the dealership certificate from the Original equipment manufacturer.

b) Bidder' General Information (Annexure A)

c) Compliance with Technical Specifications of System Equipment's,

d) Details of Service / Support Infrastructure;

e) Acceptance of all Terms & Conditions as mentioned in the NIT

f) Product Brochures containing detailed description of essential technical and performance characteristics of offered equipment

g) Audited Balance Sheet and Profit & Loss Account statements (certified by a practicing Chartered Accountant) for the last 3 Financial years (2010-11,2009-10 and 2008-09);

h) Undertaking to provide comprehensive minimum one year On-site Warranty;

i) Earnest Money Deposit by way of Demand Draft for an amount of Rs.6600 (Rupees Six thousand Six Hundred only)

j) Unpriced Schedule of Quantity showing Make/Type of various items

## **2) Envelope 2 -- Financial Bid**

This envelope will contain the Bill of Quantities (only as per enclosed proforma) duly priced.

### **3. Tenders submitted in a single envelope shall not be accepted and would be returned unopened to the respective bidders.**

4. Sealed Tenders in the prescribed tender form in two separate envelopes super scribed "No.1" and " No.2" should be submitted to the Principal/Chief General Manager, National Bank Staff College, Sector-H, LDA Colony, Kanpur Road, Lucknow - 226 012.

5. The Envelope No.2 shall not include any conditions whatsoever. In case any conditions are included in Envelope No. 2 , the same shall not be taken into consideration and the tender in such case is liable to be rejected.

6. Both the envelopes shall be submitted to the above Office not later than **07 December 2011 (1500 hrs.)**. Envelope No.1 will be opened at 1530 hrs on the same day in the presence of the tenderers or their authorised representatives who chose to be present. Based on the evaluation of the contents of envelope No.1, the Bank will decide opening of price bid in due course.

7. The Envelope No.2 shall be opened only in respect of those bidders who comply with all tender conditions put forth by the Bank and which are in line with requirements of tender document and are acceptable to the Bank. The decision of the Bank in this regard shall be binding on the bidders and not open to question or appeals. The date and time of opening of Envelope No.2 shall be intimated to the short listed parties by fax, e-mail and also by way of registered letter.

8. Tenders received late on account of any reason whatsoever and telephonic and faxed tenders shall not be entertained.

9. The completion of the said work shall be **60 days** from the issue of the work order.

10. **Liquidated damages for delay shall be 0.25% of the accepted tender amount per week of delay for each week** beyond the scheduled date of completion or approved extended period of completion. The maximum amount of liquidated damages shall be 5% of the accepted tender amount.

11. The Defect Liability period shall be 12 months from the date of handing over the system to the Bank.

12. Validity of the tender shall be 90 days from the opening of Envelope No.2

**13. Further Orders:** The Bank may place further orders for supply and maintenance of Solar Water Heating Systems at the same rate and terms & per the Rate Contact entered into with finally selected vendor, within period of six months from the date of first purchase order. However, if during this period, there is any downward price-revision for any of equipment's then vendor must offer the same to the Bank without any delay.

**14 Indemnity:** Vendor shall indemnify, protect and save the Bank against all claims, losses, costs, damages, expenses, action suits and other proceedings, resulting from infringement of any patent, trademark, copyright etc. or such other statutory infringements in respect of all the equipment supplied by it.

**15. Resolution of Disputes:** The Bank and the vendor shall make every effort to resolve amicably, by direct informal negotiation, any disagreement or dispute arising between them under or in connection with the contract. If after thirty days from the commencement of such informal negotiations, the Bank and the Vendor are unable to resolve amicably a contract dispute; either party may require that the dispute be referred for resolution by formal arbitration. All questions, disputes or differences arising under and out of, or in connection with the contract, shall be referred to two Arbitrators: one Arbitrator to be nominated by the Bank and the other to be nominated by the Vendor. In the case of the said Arbitrators not agreeing, then the matter will be referred to an umpire to be appointed by the Arbitrators in writing before proceeding with the reference. The award of the Arbitrators and in the event of their not agreeing, the award of the Umpire appointed by them shall be final and binding on the parties. The Arbitration and Reconciliation Act, 1996 shall apply to the arbitration proceedings and the venue & jurisdiction of the arbitration shall be Mumbai.

16. A pre-bid meeting shall be held on **02 December 2011 (1000 hrs.)** in the conference hall of NBSC at the address indicated above. The bidders are requested to attend the meeting and obtain clarifications, if any, required by them. No further requests for clarifications shall be entertained.

**Annexure A**

**BIDDER'S GENERAL INFORMATION (Information to be filled by the Bidder)**

1. Name of the bidder: \_\_\_\_\_

2. Year of commencement of business: \_\_\_\_\_

3. Whether approved by MNRE/BIS? : Yes / No

If yes, details: \_\_\_\_\_

4. Constitution of the bidder (Tick mark the applicable): Limited Company, Private Limited Company, Partnership, Sole Proprietorship or any other type \_\_\_\_\_

5. Bidder's Registered Address: \_\_\_\_\_

6. E-mail / Phone / Fax no: E-mail: \_\_\_\_\_ Fax: \_\_\_\_\_  
: Phone No: \_\_\_\_\_

7. Name(s) and addresses of Director(s): \_\_\_\_\_

8. Whether registered with the Registrar of Companies/ Registrar of Firms? \_\_\_\_\_

If so, mention number and date: \_\_\_\_\_

9. Whether Registered for VAT purposes? \_\_\_\_\_

If yes, mention number and date: \_\_\_\_\_

(Attach copies of VAT clearance certificate).

10. Is the firm a Manufacturer / Dealer / Distributor of SWHS.

(Attach authenticated copies): \_\_\_\_\_

11. Net Profit (Rupees. In lacs)

During FY 2010-11: \_\_\_\_\_

During FY 2009-10: \_\_\_\_\_

During FY 2008-09: \_\_\_\_\_

12. Total Turnover (Rupees. In Crores)

During FY 2010-11: \_\_\_\_\_

During FY 2009-10: \_\_\_\_\_

During FY 2008-09: \_\_\_\_\_

13. Address of after sales and service centre \_\_\_\_\_

(Attach list of the Centers, their addresses, Contact person and Tele & Mobile Nos)

We agree to abide by all the terms and obligations mentioned in the tender document. We also understand that if the details given in support of claims made above are found to be untenable or unverifiable or both, our bid may be rejected without any reference to us.

Yours sincerely

**(Signature, Name, designation, contact address and telephone number of the authorized signatory)**

**Signature Seal of the Bidder**

## **NATIONAL BANK STAFF COLLEGE**

### **Tender Documents : Supply, Installation, Testing, Commissioning and Maintenance of Solar Water Heating System (SWHS) at NBSC, Lucknow**

#### **General Conditions/Instructions to the Contractors.**

1. Sealed Tenders, should be addressed to The Principal/Chief General Manager, National Bank Staff College, Sector-H, LDA Colony, Kanpur Road, Lucknow - 226 012 and super scribed " Tender for Supply, Installation, Commissioning and Maintenance of Solar Water Heating System (SWHS)" at NBSC Campus, Lucknow and send so as to reach him **not later than 3 p.m on 07 December 2011.**

2. No tender will be received after 3.00 p.m. on **07 December 2011** under any circumstances whatsoever.

3. (a) Tenders will be opened at 4.00 p.m. on **07 December 2011** at his office by Chief General Manager, National Bank Staff College, or any other officer designated for this purpose by him in the presence of other officials of the Bank and the tenderers or their representatives, should they choose to be present.

3. (b) Tender shall remain open for acceptance by the Bank for a period of Three Months from the date of opening the financial bid which may be extended by mutual agreement and the tenderers shall not cancel or withdraw the tender during this period/extended period.

4. (a) The tender forms should be filled in English and all entries must be made by hand and written in ink.

(b) Rate should be quoted both in figures and words in the columns specified. All erasures and alterations made while filling the tender must be attested by initials of the tenderers. Over writing of figures is not permitted, failure to comply with either of these conditions will render the tender void at the Bank' option. No advice of any change in rate or conditions after opening of the tender will be entertained.

(c) Each of the tender documents should be signed by the person or persons submitting the tender in token of his/their having acquainted himself/themselves with the General Conditions of the Contract, Scope of work, Specifications, Special Conditions, etc., as laid down. Any tender with any documents not so signed is liable to be rejected.

(d) The tenders submitted on behalf of the Firm shall be signed by all the partners of the Firm or by a partner who has the necessary authority on behalf of the firm to enter into the proposed contract Similarly in case of a company, only the person authorised by the articles of the company can sign. Otherwise the tender is liable to be rejected by the Bank.

5. The National Bank Staff College does not bind itself to accept the lowest or any tender and reserves to itself the right to accept or reject any or all the tenders, without assigning any reasons for doing so.

6. Contractors are advised to visit the site of installation of the Solar Water Heating System and understand the nature & scope of the work and doubts of any nature should be got clarified before quoting.

7. Rate should include charges for removal of debris out of premises, removing stains, cleaning the site thoroughly and restoring it to original condition where work is undertaken.

8. Any taxes such as sales tax, purchase tax, turn-overtax, service tax, or any other tax on materials, equipment, labour or any other item/service in this contract shall be payable by the tendered and

institute shall not entertain any claim whatsoever in this regard. Rate should include all taxes, duties, octroi, levies, Payment of wages as per Act , VAT etc. and should be firm for the entire contract period. No variation of rates will be allowed. Quoted rate should be workable and should include all overheads and profits.

9. Though all tendered rates shall be inclusive of all taxes and levies payable under respective statutes for perusal of the Constitution (46th amendment) Act 1982, if any further tax or levies is imposed by the statute after the last stipulated date for the receipt of tender including extension, if any, and the contractor shall thereupon necessarily and properly pays such taxes, the contractor shall be reimbursed the amount so paid.

10. The leaflets catalogue, etc. should be sent invariably so that a proper evaluation of the equipment offered is possible.

**11. SUPPLEMENTARY OFFER/MODIFICATION OF ORIGINAL OFFER:**

Tender submitted against Notice Inviting Tender (NIT) shall not be returned in case the tender opening date is extended/postponed. Tenderer desirous to modify their offer/terms may submit their revised/ supplementary offer (s) within the extended Tender Opening Date (TOD) by clearly stating that extend of updation done to the original offer. The purchaser reserves the right to open the original offer along with the revised offer.

12. All components of the Solar Water Heating System supplied should conform to the stipulations as in the relevant I.S. codes (Latest Edition) BIS specification shall be followed as applicable. However, in the absence of the same the decision of NBSC will be final.

13. No advance payment will be made by the Bank.

14. Any discrepancy in settlement of bills may be brought to the notice of the Bank within a period of one month after the settlement of the Bills. The Bank will not entertain any claim regarding any dispute in settlement of the bills after the stipulated period.

**15. Income Tax, Surcharge, Works Contract Tax and other taxes as applicable will be deducted from total payment due to the contractors.**

16. Supplier/Contractor shall provide solar water heating system as per specification given separately. He shall also provide tools and tackles to his employees for installation and maintenance of the system at his cost and if necessary supplier/contractor may take insurance policy of his men, material, equipments and tools and tackles.

17. The supplier/ contractor shall have to execute maintenance contract for a period of five year from the date of expiry of Defect liability period of the system to ensure smooth operation of water heating system for this period. The supplier/ contractor shall have to fix the frequency of visits for maintenance of the system, which is to be recorded in the office of NBSC.

18. Contractor shall provide safety appliances and maintain the same at his own cost, which may be required under the statute or otherwise.

19. Supplier/Contractor shall indemnify NBSC against all claims by statutory authorities and loses under various Labour Laws, Statutes or any civil or criminal law in connection with employees deployed by him. Supplier/contractor shall also follow the Minimum Wages Act- 1948 for payment to all category of labor hired in this project.

20. The warranty period shall be one year for the complete system from the date of commissioning. However this will not include warranty on breakable items like glass etc. The defects developed in the system within the warranty period shall be rectified by the contractor promptly, free of cost. In case, the defects are not rectified within 15 days of the received of the complaints by the contractor, NBSC shall have full liberty to carry out such repairs as may be necessary to restore the system in working condition. The expenditure so incurred by NBSC shall be deducted from contractors pending claim, security etc. or may be recovered by any lawful manner.

21. The supplier/contractor shall have to replace at his own cost the equipment if the same is found defective during the warrantee/ guarantee period.

22. The Contractor shall observe all the safety precautions for the safety of the labour and the employees of the Bank during execution of works. He would be responsible for the safety of persons, employed by him.

23. The contractor shall be responsible for injury to persons or things and for damages to the property which may arise from omission or neglect of the contractor or their employees, whether such injury or damages arises from carelessness, accident or any other cause whatsoever, in anyway connected with carrying out of the work.

24. All the conditions of the contract shall be binding on the Contractor.

25. The Contractor shall comply with all the applicable Acts, Rules, Regulations, requirement of Law (s) for entering into contract and the Bank will not in any way be liable or responsible for any default/irregularities/penalties on the contractors part.

26. The contractor shall comply with the provisions of Contract, Labour Regulation & Abolition Act, 1970, Minimum Wages Act and all other labour laws and other Statutory Regulations (both Central and States) that may be enforced from time to time by the appropriate authorities. The Bank shall not be held responsible for any penalty on account of failure to adhere to the above labour regulations, etc. The contractor should be responsible to fulfill all the obligations in connection with the workers employed by the contractor for the purpose of the contract and all the Statutory and other liabilities if any including minimum wages, leave salary, uniform, ex-gratia, gratuity, ESI, Provident Fund, Workman Compensation, if any, etc.. in connection therewith shall be on the contractor account and payable by the concerned contractor.

27. The contractor should obtain necessary permission that may be required for the purpose of this contract from such authorities as may be prescribed by law from time to time.

28. The contractor shall be fully responsible and shall compensate the Bank in the event of any damage to men or material, injury/damage or death as the case may be, caused directly or indirectly due to the negligence of the contractor or his agents and / or his employees or workmen. The decision of the Bank in this regard shall be final and binding.

29. The contractor should not employ any person who is prohibited by law from being employed for fulfilling obligations under this contract.

30. Any act of indiscipline / misconduct/ theft/ pilferage on the part of any employee engaged by the contractor resulting in any loss to the bank in kind or cash will be viewed seriously and the Bank will have the right to levy damages or fine and / or even terminate the contract forthwith.

31. In case of any default or failure on your part to comply with all/ any one of the terms/ conditions, the bank reserves to itself the right to take necessary steps to remedy the situation including,

inter-alia, the deduction of appropriate amount/ s from dues otherwise payable to you and/or by taking recourse to appropriate recovery proceedings.

32. The contractor should not at any time do, cause or permit any nuisance on the site/do anything which shall cause unnecessary disturbances or inconvenience to the occupants/visitors at site or near the site of work.

33. On site, lockable storage space will be given as per availability, the security of which will be the responsibility of the contractor's. The Bank will not be responsible for contractor's materials. The contractor may be required to vacate the storage space as per exigency without any extra cost.

34. The contractor shall not directly or indirectly transfer, assign or sublet the contract or any part of it.

**35. Payment terms & conditions :**

Against satisfactory Supply of system, subject to work being executed in accordance with this contract, and scrutiny by NBSC and submission of bill alongwith delivery challans, requisite certifications & measurement sheets	70% of the executed and admissible cost shall be released after supply of the Solar Water Heating System on verification by NBSC. However, as regards other items viz. Cold water tank, cold & hot water pipelines, valves etc., 100% payment, less security deposit, will be made after Supply, Installation, Testing & Commissioning.
Against satisfactory Installation, Testing & Commissioning of system, subject to work being executed in accordance with this contract, and scrutiny by NBSC and submission of bill alongwith measurement sheets	20% of the executed and admissible cost shall be released after receiving report for installation, testing & commissioning of the system
<b>After completion of one year from date of installation and commissioning or release of subsidy from MNRE whichever is earlier</b>	Balance 10% of the executed and admissible cost
Comprehensive Annual Maintenance Contract	Proportionate payment for Comprehensive Annual Maintenance Contract will be released after completion of the respective half-year, subject to rendering of satisfactory services

**5% (five percent) Security Deposit will be deducted from each running bill as retention money and will be returned to the Party at the end of the warranty period.** The warranty period will be a minimum of one year from the date of handing over the system to the Bank. This retention amount shall be forfeited in the event of the contractor not fulfilling his obligations towards rectification of defects, if any. EMD deposited by the successful vendor shall be adjusted towards security deposit.

For Schedule B, proportionate payment for Comprehensive Annual Maintenance Contract will be released after completion of the respective half-year, subject to rendering of satisfactory services.

**36. SUPERVISION OF ERECTION & COMMISSIONING :**

Successful tenderer shall depute concerned specialist, for supervision of erection & commissioning of the machine to be carried out. **The successful tenderer shall impart training to 3-4 technical staff members of NBSC related to operation and maintenance of systems.**

37. The intending tenderers shall pay an Earnest money Deposit of **Rs. 6600** (Rupees Six thousand Six Hundred only) by a Demand Draft drawn on a Scheduled Bank favouring National Bank Staff College, Lucknow. The Earnest Money Deposit will be returned to the tenderer if his tender is not accepted, but without any interest.

38. The Earnest Money Deposit of **Rs. 6600** (Rupees Six thousand Six Hundred only) paid by the successful tenderers shall be held by the National Bank Staff College as partial deposit for the execution and fulfillment of the contract. No interest shall be paid on the said deposit.

39. THE EMD/BID MONEY SHALL BE FORFEITED:

- a) If a tenderer withdraws or modify his bid during the period of bid validity specified by the tenderer.
- b) In case of successful tenderer, if the tenderer fails to respond to the deliverables mentioned in the work order.

**40. The supplier shall help NBSC, Lucknow in preparation of documents and liasioning with Ministry of New and Renewable Energy (MNRE), Government of India for claiming applicable subsidies. In case of the subsidy not released by MNRE due to shortcoming in system specifications, the same amount shall be deducted from the total payable amount to the supplier.**

41. The Bank reserves the right to check the progress of the work and adherence to the technical specifications etc. any time during the installation phase.

42. The agreement may be terminated by the Bank in case the Party does not adhere to the terms of contract.

43. PACKING FORWARDING : Contractors wherever applicable shall after proper painting pack and crate all equipment in such manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till time of installation. The contractor shall be held responsible for all damage due to improper packing.

44. INSURANCE : The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacturer acquisition or transportation and shall be borne by the contractor, included in the bid price.

45. ANNUAL MAINTENANCE CONTRACT : It is desirable that tenderer also signs an annual maintenance contract with NBSC at the rates & conditions approved by NBSC against the orders placed by NBSC. A copy of conditions is enclosed. However this annual maintenance contract is only desirable and not binding on NBSC to take it.

46. COMMISSIONING : The contractor shall submit a Joint commissioning and system handing over report after commissioning of the system at the site on the prescribed format of NBSC.

## **TERMS AND CONDITIONS OF ANNUAL MAINTENANCE CONTRACT**

In the deed of contract unless the context otherwise required:

### **(A) General:**

1. The Contractor shall be deemed to have carefully examined all the details attached and part of this contract. If he shall have any doubts so as to meaning of any portion of any conditions, specifications etc. he should before signing the contract set forth the particulars thereof and submit to NBSC in order that such doubts may be removed.
2. The contract shall be valid for five years from the date of completion of one year of warranty and may be renewed by both the parties on the mutually acceptable terms and conditions.
3. Any work which is not covered under this contract but is essentially required for proper maintenance of the Solar Water Heating system, the work shall be carried out by the mutual consent of NBSC and the contractor as an extra item for which payment shall be made separately at the rates decided by NBSC to Contractor.

### **B. SPECIFIC CONDITIONS**

1. The contractor shall have the right to check the complete Solar Water Heating system(s) before entering into the maintenance contract.
2. NBSC shall hand over the Solar Water Heating systems (s) to contractor in operating and working conditions at the time of commencement of contract.
3. For preventive maintenance the contractor shall inspect the system every three months and shall carry out necessary preventive maintenance.
4. For any breakdowns contractor shall be called upon to repair the system and shall make all the necessary visits to repair the systems.
5. Cost of all components and spares shall be borne by the contractor during the warranty/ maintenance period of contract excluding following:-
  - (a) Toughened Glass of solar collector
  - (b) End point water taps.
6. Any shifting or reinstallation of system shall not be covered under the contract.
7. Availability of cold water to the system shall be responsibility of NBSC.
8. This maintenance contract shall not cover any repair/replacement necessitated by loss or damage due to misuse, accident, fire and natural calamities or any such forced circumstances.

### **C. PAYMENT TERMS :**

1. The total contract price shall be divided into half yearly installments.
2. Proportionate payment for Comprehensive Annual Maintenance Contract will be released after completion of the respective half-year, subject to rendering of satisfactory services.

## **SPECIAL TERMS AND CONDITIONS**

- 1) In the terms and conditions set in here before the term "The Bank" refers to the National Bank Staff College (NBSC), The Chief General Manager refers to Chief General Manager/Principal of NBSC.
- 2) "The Party" refers to the Party who has been awarded the contract for the Supply, Installation, Testing, Commissioning and Maintenance of the Solar Water Heating System at NBSC, Lucknow.
- 3) All disputes arising out of or in any way connected with this Agreement shall be deemed to have arisen at Lucknow and Courts in Lucknow only shall have jurisdiction to determine the same.
- 4) That the several parts of this Contract have been read by the Party and fully understood by him/them.

Annual Maintenance Contract (AMC) for minimum five years after the defect liability period will also be provided by the Party. **However, NBSC may chose not to execute the AMC, if so required, and no claims shall be admissible from the contractor on this account.**

**The price bid will be evaluated taking into consideration BOTH Schedule A and B i.e. SITC of SWH system and AMC for five years respectively.**

The exact location and other details can be ascertained by visiting the site. Other details are given in the Bill of Quantities.

Place : Lucknow  
Date :

Signature/Seal of the vendor

**NATIONAL BANK STAFF COLLEGE (NBSC)  
JOINT COMMISSIONING AND HANDING OVER CERTIFICATE**

Name of the user:.....

Location.....District.....

It is hereby certified that.....LPD.....nos. solar water heating systems has/ have been supplied, installed and commissioning as per the specifications and terms & conditions mentioned in the agreement by M/S..... and is / are handed over to the user on .....(date).

The details of the system are as under:

1.           Type,           make           and           dimension           of           the  
collectors.....

2. Storage tank type.....(material etc.)

3. Heat exchanger make and type.....

4. Cold water tank detail.....

5. Training for operation & maintenance Provided/not provided of the system.

6. Technical literature, operation & maintenance manual Provide / not provided

(Signature)  
Authorized signatory of Contractor

(Signature)  
Authorized signatory of User



### Site conditions and requirements

Application of hot water	Bathing (for hostel wing) and cleaning of utensils (for dining hall kitchen)
Type of water	Potable, as available through local groundwater supply system
Water Pressure	Gravity Pressure
Outlet temperature required	60 Deg.C at the tap located in bathrooms / canteen during Nov.-Dec.-Jan.
Type of building	Hostel – Multiple wings
Type of use	The hot water supply pipeline from Solar Water Heater shall be connected to the incoming angle valve of existing Storage water heater provided in hostel room.
Installation Location	Terrace of the hostel wings
Auxiliary electric heating for overcast conditions	To be provided through auxiliary tank and control panel, <b>if required.</b>
Type of Solar Collector	Flat Plate Collector (FPC) <b>or</b> Evacuated Tube Collector (ETC) as per BIS specifications

## **TECHNICAL SPECIFICATION OF THE SYSTEM**

### 1. Flat Plate Collector

#### **A. COLLECTOR SPECIFICATION (I.S.I. MARK – IS 12933 Part I-2003)**

1. Collector Frame : Specially Designed Extruded Aluminium, 16SWG
2. Collector Type : Cu-Cu fin and Tube type Laser welded doubled lined fins.
3. Absorber Coating : Selective – NALSUN coating
4. Absorber Plate : Copper – 36SWG
5. Raiser : Cu – Dia 12.9mm x 0.57mm Thick x 1966mm L
6. Inlet Header : Copper -Dia 25.4mm x 0.7mm thick
7. Bottom Insulation : 50mm thick, Rock wool or Puff type, below raiser assembly
8. Side Insulation : 25mm thick Rock wool or Puff type
9. Reflective Foil : Aluminium Sheet – 0.05 mm thick
10. Coating Absorptivity : > 0.95
11. Coating Emissivity : < 0.20
12. Transmittivity : 88%(Min. 85% Quality Norm) Collector Efficiency = 77%
13. Glazing (Cover) : Toughened Glass
14. Insulation : Rock Wool or Puff Type
15. Grommet : EPDM
16. Gasket for Glass (Beading): EPDPM U type gasket
17. Collector Back Sheet : 22 swg Aluminium sheet
18. Hardware : Stainless Steel – 304/zinc plated
19. Sealing : Silicon Sealant between Glass, clamp and casing
20. Header Inlet & Outlet: Brass Flanges
21. Weight : 38 Kg.(Dry), 41Kg (Flooded)
22. Collector Support Structure: 35 x 35 x 3mm GI Angle
23. Operating conditions : 10 To 50 Degree Celsius
24. Wind Velocity: 75 Km/hr.
25. Termination : 63mm dia Brass flanges with 4 holes of dia 7mm at PCD 45mm. EPDM gasket & 4 nos. Of M6 x 25 SS 304 bolts

### Features

- Corrosion resistance, extruded aluminium sections with stainless steel fasteners
- High Transmissivity, toughened and tempered glass
- Designed, manufactured and certified as per “BIS” Specifications.
- In case any specification or feature is not/partially covered in the list above, BIS and there applicable standards as per practice recommended by MNRE are to be followed.

## **B. INSULATED HOT WATER TANKS & CONTROLS**

**Method of heat exchange in storage tank (FOR 1000 LPD SYSTEM) : Indirect heating type (non-mixing type). Maintenance of proper level of heat transfer medium through refilling will be duty of the supplier as part of AMC**

- Tank Type : Cylindrical
- Capacity : Equivalent to system capacity in LTRS
- Material : Stainless Steel 304 grade

- Insulation : rock wool – 48 kg/m<sup>3</sup> Density
- Insulation thickness : 100mm thick
- Cladding Material : 22 SWG Aluminium
- Sacrificial Anode : To take care of galvanic corrosion
- Temperature guage : Gluck type/Steam type (1 – 120 °C )
- Strainer : Y type strainer, C.I.for filtration of suspended solids in the cold water
- Water meter : On line Type, Brass screwed ends
- Tank stand : GI stand,
- Accessories : Ball Valves etc. Required in the system

**C. SYSTEM INTERNAL PIPING** (Solar Tank To Collector & Collector to Tank) G.I. Pipe,'B' class,TATA/JINDAL make with insulation & 26 SWG Aluminium Cladding

**D. SYSTEM EXTERNAL PIPING** (Inlet to solar tank & Outlet from solar tank )

1. Inlet (cold water) pipeline : GI pipe,'B' class,TATA/Jindal make
2. Outlet (hot water) : As per specifications mentioned in Schedule of quantity

**E. COLD WATER TANK**

Capacity of cold water tank shall be equal to the system capacity.

**F. ADDITIONAL STRUCTURE WORK**

1. Collector frame work : GI angle 35x35x5 mm thick
2. Barricading work : GI angle 35x35x4 mm thick.

**G.CIVIL WORK**

Grouting of collector legs, solar tank legs & cold water tank legs. Civil work is to be carried out with PCC in ratio of 1:2:4 and shall be carried out by the supplier.

**H. Temperature gauge and valves**

At least one temperature gauge is to be fitted in every hot water tank. Adequate number of valves are to be provided for ensuring smooth operation and maintenance of system.

**2. Evacuated Tube Collector :**

As per the MNES approval. The Contractors shall enclosed copy of MNES approval.

**2. Storage tank:**

**(a) Material**

Storage tank shall be of S.S. 1000 liters. Adequate protection is to be provided.

**(b) Thickness**

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<b>Minimum thickness</b>	<b>Tank capacity</b>
22 guage	100 lpd
20 guage (0.91mm)	200 lpd
20 guage (0.91 mm)	500 lpd
18 guage (1.2 mm)	1000 lpd

**(c) Insulation**

Insulation of R-value= 3.34m<sup>2</sup> 0C/W to withstand a temperature of 100 0C should be used. Thin polythene sheet shall be used as covering between the glass wool and the cladding sheet besides the retaining material such as chicken mesh etc. Fibre glass of thickness 1.63mm/Al sheet of thickness 22 SWG/GI sheet of minimum 24 SWG shall be used for cladding of tank insulation. The storage tank shall be properly installed at site using enameled coat appropriate size angle iron stands, girder cement concrete pedestals of 1:2:4 ratio or any other specific provision suitable to site to ensure the stability against heavy storm etc.

### **3. PIPING:**

**A .** Material Medium glass B class G.I. (for cold water pipeline) as per IS 1239 shall be used for piping

**B.** 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 strainer of standard make should be fitted in the main cold water supply line before the system.

### **4. Valves/Nipples/Tees/Bends:**

Gunmetal valve as per ISI specifications shall be used. Nipples/ Tees and bends shall be of medium class GI ( B class)/brass or Cu. Gunmetal valve in each row shall be provided.

### **5. Instrumentation:**

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

### **6. Controls:**

For the systems of 1000 lpd and above having electrical backup suitable controls to be provided for on- off of electrical backup to control set point temperature of hot water.

### **7. System lay out & Design:**

**(a)** Maximum no of collectors in series should not be more than ten.

**(b)** Maximum no of collectors in parallel in a row with header-to-header connection should not be more than six.

**(c)** Air vent at appropriate places should be installed to prevent air locking. Air vents must be incorporated in designs.

### **8. Heat Exchanger:**

Up to 5000 lpd coil type or straight tube type heat exchangers to S.S shall be used. Minimum surface area for heat exchanger (S.S) shall be 0.24 sqm for each 100 lpd at 60 0C and 0.36 sqm for each 100 lpd at 80 0C. It is desirable that maintenance Manual for heat exchanger be provided by the manufacturer. The maintenance manual should include descaling frequency calibration checks, for instruments, replacement schedule for valves cleaning procedure and recommendations for various qualities of water for use in the installation. Proper required insulation with Aluminum cladding should be provided. Specifications of this cladding will be the same as that prescribed for hot water storage tank.

### **9. Cold Water tank:**

**(a) Material:** Only Sintex or equivalent material. The tank should have the facility for maintenance.

**(b) Capacity:** As per the capacity of solar water heating.

**(c) Installation:** Tank shall be properly installed/grouting in a suitable stand as per the design of the solar water heating system.

### **10 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 thermostat. An adequate switching device shall be installed in the electrical circuit.

**Note : Collector specifications given are BIS specifications and for ETC should be MNRE approved only. Only Collectors with BIS mark will be supplied with proper marking as per latest BIS specification / ETC as per MNRE approval or future amendments if any. Collectors with equivalent specifications as BIS but without BIS mark will not be accepted.**

**(technical specifications must be signed by tenderer and submitted with Technical bid. If necessary any information regarding Technical Bid must be submitted duly signed by Tenderer. )**

## **PROFORMA OF AGREEMENT**

This Agreement is entered into this day of 2011 between the National Bank Staff College having its Head Office at 'G' Block, Bandra- Kurla Complex, Bandra (East), Mumbai- 400 051, hereinafter referred to as "The Bank" and M/s hereinafter call the 'The Party'.

Whereas the Party has been awarded the Contract for the Supply, Installation, Commission and Maintenance of the Solar Water Heating System at NBSC, Lucknow, consequent upon the Bank accepting its Tender and the Party accepting the Terms and Conditions, Special Terms and Conditions and Memorandum and related items.

NOW, THIS AGREEMENT WITNESS THAT IT IS MUTUALLY AGREED BY AND BETWEEN THE PARTIES:-

1. The Party will Supply, Install, Test, Commission and Maintain the Solar Water Heating System at NBSC, Lucknow for 5 years from the date of completion of the warranty period at NBSC for consideration of Rs.

( in words ). The payments will be made as per the terms indicated in the general conditions/instructions to the contractors.

2. The Party agrees to replace/repair any defects in this system during the warranty period free of cost. The Party will place at the disposal of the Bank, sufficient number of technicians during the first six months to ensure proper working of the system and attend to any teething problems. The Party will carry out necessary repairs/replacement to keep the system in working condition after the warranty period on chargeable basis. No material and labour charges will be paid for any such repairs/replacement. The rates indicated should include all Taxes and Income Tax will be deducted from the bills submitted for comprehensive AMC.

3. Any complaints will be attended to promptly by the Party and on no account will there be any delay in repair/replacements to ensure the smooth working of the system.

4. The Party will ensure availability of fast moving spares required for the system to ensure speedy repairs.

5. Notwithstanding what has been hitherto stated, any other matters not covered in this Agreement will be settled on mutual discussions and subject to mutual agreement.

6. The reference to the Chief General Manager in this agreement and the schedules hereto annexed shall mean the Principal/Chief General Manager holding charge of National Bank Staff College Lucknow and shall include, in respect of any powers exercisable by him or NBSC under this agreement and any other officers of the Bank designated by him in that behalf from time to time.

7. The Party will abide with all the Terms and Conditions specified in the General conditions/instructions to the contractors.

8. All the documents pertaining to the Tender will be construed as part and parcel of this agreement.

9. This agreement shall be executed in duplicate. The Bank shall retain the original and Party the duplicate. Stamp duty on original and duplicate shall be borne by the Party.

IN WITNESS WHEREOF the Bank has set its hands to these presents and a duplicate hereof through its authorised official and the Party has set his hands to these presents and the duplicate on the day/month and year first hereinabove written.

Signed and delivered by the within named National Bank Staff College  
by the hand of its authorised official

\_\_\_\_\_

(Name and Designation)

**in the presence of**

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

**Signed and Delivered by Shri**

\_\_\_\_\_

**In the presence of**

(i) \_\_\_\_\_

ii) \_\_\_\_\_

**Place :** \_\_\_\_\_

**Date :** \_\_\_\_\_

## APPENDIX

### SCHEDULE OF FISCAL ASPECTS

S No	Item	Details
1	Earnest Money Deposit	<b>Rs.6,600/-</b> (Rupees Six Thousand Six Hundred only))
2	Possession of site	Immediately on award of work
3	Time of completion	Within <b>60 days</b> , from day of written order to commence work or from the date the site is handed over, whichever is later.
4	Liquidated damage per day	0.25% of the accepted tender amount per week of delay for each week beyond the scheduled date of completion or approved extended period of completion subject to a maximum of 5% of value of contract.
5	Payment terms & conditions (Schedule A)	As per clause 35 of General Terms & Conditions
6	Payment terms & conditions (Schedule B)	Proportionate payment for Comprehensive Annual Maintenance Contract will be released after completion of the respective half-year, subject to rendering of satisfactory services.
7	Payment of final bill	Within one month from the date of receipt of bill
8	Retention money/security deposit bills	5 (Five) percent of value of work shown in bills
9	Release of retention money	The retention amount shall be refunded after one year from the date of virtual completion, subject to satisfactory rectification of defects, if any
10	Defects liability period	12 (Twelve) months from the date of virtual completion

**EMPLOYER**

**CONTRACTOR**

### **Tender evaluation criteria**

The evaluation of the tender will be carried out as follows:

1. The tenders confirming to the "Notice inviting Tender", qualifying requirements, instructions to the tenderers, contractor's obligation, technical and price bid conditions only will be evaluated.

**2. Such of those tenders which conform to the technical bid requirements, provide all required information and declarations for meeting and agreeing with requirements and terms of this tender, only will be evaluated.**

3. NBSC, Lucknow officials may visit the tenderer's office and their client's place to evaluate the capability and assess the performance.

4. Capability of supplier/contractor will be assessed on the basis of fulfilling of technical requirements and other criteria mentioned in the technical bid.

5. Successful tenderer after the above process will be invited for opening of the price bid.

6. The technically qualified tenderer who quotes the lowest price, inclusive of the maintenance cost for five years will be awarded the contract.

**TECHNICAL BID (PART-1)**

**UNPRICED SCHEDULE OF QUANTITY - RATES AND AMOUNTS NOT TO BE FILLED HERE**  
**Supply, Installation, Testing and Commissioning of Solar Water Heating System at NBSC, Lucknow**

S. No	Description	Type / Make (to be filled in by the bidder)	Qty	Unit
1	Supply of Solar Water Heating System Thermosyphon at minimum 60 degree C for Cold region, of <b>1000 Litres per Day</b> (LPD) rated capacity (FLAT PLATE COLLECTOR TYPE OR EVACUATED TUBE COLLECTOR TYPE) Solar Collector, stand & Hot water storage tank including insulation, including transportation up to sites etc. complete as per detailed technical specifications mentioned in the tender document <b>BUT WITHOUT ELECTRICAL BACK-UP AND HEAT-EXCHANGER. RATES FOR THESE ITEMS TO BE QUOTED SEPARATELY AS OPTIONAL ITEMS BELOW</b>		1	Nos.
2	Installation, Testing & Commissioning of above system at S.No.1		1	Nos.
3	Same as (1) above but <b>500 Litres per Day</b> (LPD) rated capacity		1	Nos.
4	Installation, Testing & Commissioning of above system at S.No.3		1	Nos.
5	Providing and fixing GI pipes (Tata or Jindal Make) complete with GI fittings and clamps including cutting and making good the walls etc. if required.			
a)	25 mm G.I. "B" Class (Cold water line)		36	Mtr.
b)	20 mm G.I. "B" Class (Cold water line)		6	Mtr.
6	Providing and fixing Polyethylene-Aluminium-Polyethelene (PE-AL-PE) Composite pressure pipes conforming to IS-15450-2004 U.V. stabilised with carbon black having thermal stability for hot & cold water supply (EXTERNAL WORK), capable to withstand temperature upto 100 degree C including special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc. with clamps at 1 metres spacing. This includes testing of joints complete as per direction of the Engineer in charge.			
	External work- Exposed on wall / floor / coloumn / beam etc.			
a)	25 mm OD (Hot water line)		48	Mtr.
b)	20 mm OD (Hot water line)		50	Mtr.
7	Providing & fixing Gun Metal Valve with C.I. wheel of approved quality (screwed end)			
a)	25 mm nominal bore		7	Nos.

<b>S. No</b>	<b>Description</b>	<b>Type / Make (to be filled in by the bidder)</b>	<b>Qty</b>	<b>Unit</b>
b)	20 mm nominal bore		3	Nos.
8	Providing and fixing gun metal non return valves of approved quality (screwed end)			
a)	25 mm		4	Nos.
b)	20 mm		2	Nos.
9	Providing and fixing Cold water tank Sintex make of following capacities with MS stand suitable for respective tanks complete with painting with minimum two coats of red oxide paint and two coats of enamel paint. Cold water tank shall be provided at a height of 3 meters from the level of roof			
a)	1000 litre		1	Nos.
b)	500 litre		1	Nos.
	<b>OPTIONAL ITEMS</b>			
1	Electrical back-up with installation for 1000 LPD system			
2	Electrical back-up with installation for 500 LPD system			
3	Heat exchanger with installation for 1000 LPD system			
4	Providing and fixing power wiring for back-up heaters with 2 x 4 sq mm FRLS PVC insulated copper conductor single core cable in surface PVC conduit 20 mm dia alongwith 1 No. 1.5 sq mm FRLS PVC insulated copper conductor single core cable for loop earthing from existing MCB DB upto system switchboard as required. in/on walls/floors/ceiling/beams/coloumns. The cost also includes providing and fixing bends, junction boxes, tees, saddles, screws, necessary hardware, flexible pipe etc. where necessary.		65	Mtr.
	<b>TOTAL (SCHEDULE A)</b>			

**National Bank Staff College (NBSC), Lucknow**

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**Tenders for Supply, Installation, Testing, Commissioning and Maintenance of Solar Water Heating System at NBSC Campus, Sector-H, L.D.A. Colony, Kanpur Road, Lucknow - 226 012**

**PART II (FINANCIAL BID)**

**(TO BE SUBMITTED IN A SEPARATE SEALED COVER)**

## **NATIONAL BANK STAFF COLLEGE**

### **SCHEDULE OF QUANTITIES**

#### **Preamble :**

The rates quoted shall include the following :

- i. Removal and carting away all the debris from Employer's premises
- ii. Double scaffolding (wherever applicable) upto complete height of the building externally and to the floor height in each floor.
- iii. All articles or furniture, equipment etc. shall be protected by covering with polythene sheet or tarpaulin etc. and the furniture etc. rearranged and floors cleaned and mopped after the day's work.
- iv. The work shall be carried out both during/after working hours and even on holidays if situation so warrants.

**SCHEDULE OF QUANTITY**  
**SCHEDULE-A**

**Supply, Installation, Testing and Commissioning of Solar Water Heating System at NBSC, Lucknow**

S. No	Description	Type / Make (to be filled in by the bidder)	Qty	Unit	Unit rate (in Rs)	Total Amount (in Rs)
1	Supply of Solar Water Heating System Thermosyphon at minimum 60 degree C for Cold region, of <b>1000 Litres per Day</b> (LPD) rated capacity (FLAT PLATE COLLECTOR TYPE OR EVACUATED TUBE COLLECTOR TYPE) Solar Collector, stand & Hot water storage tank including insulation, including transportation up to sites etc. complete as per detailed technical specifications mentioned in the tender document <b>BUT WITHOUT ELECTRICAL BACK-UP AND HEAT-EXCHANGER. RATES FOR THESE ITEMS TO BE QUOTED SEPARATELY AS OPTIONAL ITEMS BELOW</b>		1	Nos.		
2	Installation, Testing & Commissioning of above system at S.No.1		1	Nos.		
3	Same as (1) above but <b>500 Litres per Day</b> (LPD) rated capacity		1	Nos.		
4	Installation, Testing & Commissioning of above system at S.No.3		1	Nos.		
5	Providing and fixing GI pipes (Tata or Jindal Make) complete with GI fittings and clamps including cutting and making good the walls etc. if required.					
a)	25 mm G.I. "B" Class (Cold water line)		36	Mtr.		
b)	20 mm G.I. "B" Class (Cold water line)		6	Mtr.		
6	Providing and fixing Polyethelene-Aluminium-Polyethelene (PE-AL-PE) Composite pressure pipes conforming to IS-15450-2004 U.V. stabilised with carbon black having thermal stability for hot & cold water supply (EXTERNAL WORK), capable to withstand temperature upto 100 degree C including special fittings of composite material (engineering plastic blend and brass inserts wherever required) e.g. elbows, tees, reducers, couplers & connectors etc. with clamps at 1 metres spacing. This includes testing of joints complete as per direction of the Engineer in charge.					
	External work- Exposed on wall / floor / coloumn					

S. No	Description	Type / Make (to be filled in by the bidder)	Qty	Unit	Unit rate (in Rs)	Total Amount (in Rs)
	/ beam etc.					
a)	25 mm OD (Hot water line)		48	Mtr.		
b)	20 mm OD (Hot water line)		50	Mtr.		
7	Providing & fixing Gun Metal Valve with C.I. wheel of approved quality (screwed end)					
a)	25 mm nominal bore		7	Nos.		
b)	20 mm nominal bore		3	Nos.		
8	Providing and fixing gun metal non return valves of approved quality (screwed end)					
a)	25 mm		4	Nos.		
b)	20 mm		2	Nos.		
9	Providing and fixing Cold water tank Sintex make of following capacities with MS stand suitable for respective tanks complete with painting with minimum two coats of red oxide paint and two coats of enamel paint. Cold water tank shall be provided at a height of 3 meters from the level of roof					
a)	1000 litre		1	Nos.		
b)	500 litre		1	Nos.		
	<b>OPTIONAL ITEMS</b>					
1	Electrical back-up with installation for 1000 LPD system					
2	Electrical back-up with installation for 500 LPD system					
3	Heat exchanger with installation for 1000 LPD system					
4	Providing and fixing power wiring for back-up heaters with 2 x 4 sq mm FRLS PVC insulated copper conductor single core cable in surface PVC conduit 20 mm dia alongwith 1 No. 1.5 sq mm FRLS PVC insulated copper conductor single core cable for loop earthing from existing MCB DB upto system switchboard as required. in/on walls/floors/ceiling/beams/coloumns. The cost also includes providing and fixing bends, junction boxes, tees, saddles, screws, necessary hardware, flexible pipe etc. where necessary.		65	Mtr.		
	<b>TOTAL (SCHEDULE A)</b>					

**Total amount in words (Schedule A) = Rupees \_\_\_\_\_**

**SCHEDULE OF QUANTITY**  
**SCHEDULE-B**

S. No	Description	Unit	Unit rate (in Rs) per annum	Total Amount (in Rs)
1	Charges towards YEAR WISE comprehensive (material + labour) Annual Maintenance Contract for 5 years <b>after expiry of the warranty period.</b> The amount will be payable half-yearly after completion of the respective half-year, subject to satisfactory services.			
a)	1st year	LUMP SUM		
b)	2nd year	-do-		
c)	3rd year	-do-		
d)	4th year	-do-		
e)	5th year	-do-		

**Total amount in words (Schedule B) = Rupees \_\_\_\_\_**

**Signature with seal of the Party**

**Date :**

**Place :**