Tender No. NEEPCO/Coord/GHY/F-60/2012-13/ 05 **Dtd.03.12.2013**

Tender for

Design, Supply, Installation, Testing & Commissioning of 1000 LPD Solar Hot water System for NEEPCO Guest House, R.G.Baruah Road, Guwahati-781005.

Issued to :

Details of Tender Fees :

Date : **Signature of Issuing Authority**

NORTH EASTERN ELECTRIC POWER CORPORATION LTD.
(A Govt. of India Enterprise)
NEEPCO Bhawan, R.G.Baruah Road, Guwahati -781005

DETAIL TENDER NOTICE

Tender Notice No: NEEPCO/Coord/GHY/F-60/2012-13/ 05 dated.03.12.2013

1. TECHNICAL PARAMETERS AND SCOPE OF THE CONTRACT

1.1. SYSTEM DESCRIPTION:
1000PD (20 sq metre) Solar Hot Water Systems at NEEPCO Guest House Guwahati , Solar Flate Plate Collector, Cold water Tank & piping and Hot water piping with accessories

1.2 SCOPE OF WORK

i) Design, Supply, Installation, Testing & Commissioning of 1000LPD (20 sq metre) Solar Hot Water Systems at NEEPCO Guest House Guwahati

ii) The work will cover installation of Solar Flate Plate Collector, Cold water Tank and piping and Hot water piping with accessories.

iii) No electric back up need be provided. In all locations/bathrooms where electric geysers are already installed, solar hot water storage tank pipe shall be connected to its inlet of the geysers and thermostat if possible, set at around 40 degree centigrade.

2. ELIGIBILITY:PRE-QUALIFICATION REQUIREMENTS OF TENDERER

2.1 The tenderer shall be a Manufacturer or Project Developer recognized/approved by the Ministry of New and Renewable Energy, Govt. of India. Local dealers/agents will be issued Tender Documents but they will have to submit authorisation document from their Principal Organisation in Format A provided under item 2.7.1 below. The tender document should be issued in the name of the Principal Organisation only.

2.2 The tenderer should supply system which employ collectors having valid BIS certificate.
Copy of BIS certificate/approval should be submitted with the tender.

2.3 The tenderer must have executed at least three projects similar to those of this tender during last three years. Details may be submitted in Format B under Item 2.7.2 below with supporting work orders and certificates.

2.4 The tenderer should have adequate financial stability and status to meet the financial obligations pursuant to the scope of work. Copy of balance sheet for last three years shall have to be submitted to examine this aspect.

2.5 Has adequate local service setup to provide dependable and quick after sale services including necessary repair and maintenance of the system to be installed and submit necessary documents regarding such setup.

2.6 The above stated requirements need be fulfilled by the tenderer as pre qualification requirement, NEEPCO.may also ask for any additional information as may be deemed necessary.

2.7 Formats mentioned under Item 2.1 and 2.3 are given below:

2.7.1 FORMAT OF AUTHORISATION BY A PRINCIPAL ORGANISATION (Reference item No 2.1)

FORMAT A

Sub. : Authorization by a Principal Organisation

DECLARATION

(To be submitted on Rs. 100/- stamp paper)

We are a established manufacturer of Solar Hot Water System having factory at…… Document (certified copy) in respect of our recognition/authorization of Ministry of New and Renewable Energy (with validity upto ……) is enclosed herewith.

Hereby authorize M/s._____ (*name* & address of distributor / agent) to bid, negotiate and conclude the order with you as our authorized agent.

We shall remain responsible for the tender/ Agreement negotiated by M/s _____, jointly and severely. No company or firm or individual other than M/s _____ are authorized to bid, negotiate and conclude the order in regard to this business against this specific tender as for all business in the entire territory of India.

In case duties of the agent/distributor are changed or agent/ distributor is changed it shall be obligatory on us to automatically transfer all the duties and obligations to the new Indian Agent failing which we will ipso-facto become liable for all acts of commission or omission on the part of new Indian Agent/ distributor.

[Name & Signature]
for and on behalf of M/s. _____ [N*ame of Principal Organisation*]

Date: Place:

2.7.2 FORMAT FOR WORK EXPERIENCE(Reference item no- 2.3)

FORMAT B

Name of the Organisation								
Solar Hot Water System in last 3 years								
Sr. No	**Name of the Project**	**Name & Address of the Client**	**Contact telephone Number of the client**	**Size of System (size of collectors in SqM)**	**Value of works in Rs**	**Start date**	**Date of completion**	**Present functional status**

Note : Attach relevant Work Order and completion certificates from the implementing Agency/ Owner for works in previous 3 years.

Authorized Signatory
Company Seal

Date:
Place:

3. RESPONSIBILITY OF TENDERER TO STUDY SITE AND OBTAIN INFORMATION:

3.1 The tenderer must obtain for himself on his own responsibility and at his own expense all the information which may be necessary for the purpose of filling this tender and for entering into contract for the execution of the same .He must inspects the site of the work. The visit to the site may be undertaken with prior intimation to Sr.Manager(C), Coordination, NEEPCO Ltd., Guwahati. The tenderer shall be deemed to have carefully examined the works and site conditions, the general and the special conditions, specifications and schedules and shall be deemed to have visited the sites of the work and to have fully informed himself regarding local conditions and carried out his own investigations to arrive at rates quoted in the tenderer.

3.2 If tenderer shall have any doubt regarding this project in any matter regarding the general conditions or the special conditions, or the scope of the work or the specifications, or any other matter concerning the contract, he shall attend the **Pre-Bid meeting**. Once the Tender is submitted, the matter will be decided according to the Tender conditions in the absence of such authentic pre-clarification.

4. INFORMATION REQUIRED WITH THE TECHNICAL BID OF THE TENDER

4.1 The tender shall clearly indicate the name of the manufacturer, type and model of each principal item or equipment proposed to be supplied. The tender may also contain details of specifications and other comprehensive descriptive materials in support of technical specifications.

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

4.3 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 NEEPCO. Any deviations from these will not be permitted during the execution of contract, without specific written permission of NEEPCO.

5. CLARIFICATION ON TENDER DOCUMENT

5.1 Any prospective tenderer requiring any clarification on the tender document regarding various provisions / requirements/ preparation/ submission of the tender, may contact Sr.Manager(C), Coordination, NEEPCO Ltd., Guwahati 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.

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

6. AMENDMENTS IN TENDER DOCUMENT

6.1 At any time prior to the due date for submission of the tender or even prior to the opening of the financial bid, NEEPCO 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.

6.2 The amendments will be notified on the website at least 3 days before the proposed date of submission of the tender. NEEPCO 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.

6.3 In case amendments is notified by NEEPCO after received of the tender (prior to the opening of financial bids), all the tenders received by NEEPCO 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.

7. COMPLETION PERIOD

7.1 The completion period of the entire work shall be 45 (forty five) days from the date of issue of work order. An activity Bar Chart is to be furnished by the tenderer.

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.

7.2 In case the contractor fails to execute the said work or related obligations within stipulated time, NEEPCO 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 NEEPCO during such execution of the work shall be recovered from the contractor.

7.3 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.

8. QUALITY and WARRANTY

General Requirements

i) System will be well grouted/ clamped with collectors installed so as to enable it to sustain the highest wind pressure of that area.

ii) All the collectors will be south facing inclined at suitable angle to give best performance in winter

iii) There will not be any shadow falling on the collectors from nearby structures or of other collectors in front or back row

iv) Hot water pipe lines of any kind in colder regions will be fully insulated from the point of drawl of water from tank to delivery points. In other regions also care will be taken to avoid heat losses from pipelines.

v) System will be installed nearest to the point of hot water usage to avoid longer pipeline & higher heat losses.

vi) Where water quality is bad either FPC based systems with Heat Exchanger or ETC based systems will be installed.

vii) The workmanship & aesthetics of the system will be good and it should be visible to anybody

viii) Air vent pipe, make up water and cold water tanks will be installed as required for smooth functioning of the system

ix) There won't be any leakage observed in the system from tanks/ collectors/ pipelines

x) No electric back up will be provided in hot water storage tank at places where electric geysers are already installed. At places where electric geysers are not installed, electric back up could be provided in upper portion of storage tank, if necessary. Other option is to have an instant/ very small geyzer in bathroom with outlet of solar hot water storage tank connected to its inlet and thermostat set at say 40 C. This will help consuming less amount of electricity during non-sunny days.

8.1 QUALITY AND SATISFACTORY PERFORMANCE

8.1.1 The contractor shall warrant that all the systems, components and material are as and per applicable standards and quality. Each item shall be in accordance with the specified technical parameters and should be new as well of the highest grade and consistent with established and generally be as per accepted standards as mentioned in the item 3.7

below. It shall be in full conformity with the drawing or samples supplied by the tenderer, if any and all equipment after commissioning, shall operate properly within the limits of stipulated standards of performance.

8.1.2 If within the stipulated warranty period the goods or any parts thereof are found defective because of design, workmanship or materials, the tenderer at his own expense, repair or furnish and install/ replace parts of design, workmanship and material approved by the Purchaser.

8.1.3 The contractor shall rectify defects developed in the Systems within Warrantee/ CMC period promptly. In case the contractor does not rectify the defects within 3 days of the receipt of complaint, NEEPCO may restore the System in working condition on contractor's expenses.

8.1.4 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 NEEPCO 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 NEEPCO and will be binding on the contractor.

9. WARRANTY PERIOD

The Warranty periods shall be 12 months from the date of handing over the system in perfect working condition, after commissioning.

10. INSPECTION AND TESTS

NEEEPCO or its duly authorized representatives shall have the right to inspect and /or to test the equipments/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 different components of the project at all reasonable times during their manufacture.

11. PAYMENT TERMS

11.1 80 % of the contract value shall be paid after supply, erection and commissioning of system.

11.2 Balance 10% amount shall be paid after 2 (two) months of satisfactory working of the system

11.3 Remained 10% shall be retained as Security Deposit for 1 (one) Year from the date of Commissioning & handing over of the system.

12 OTHER TERMS AND CONDITIONS:

12.1. The material used for the work shall be new & best quality available and work should be carried out with best workmanship. The material used and works carried out shall be as per IS / IEC wherever applicable.

12.2 The firms shall furnish complete and satisfactory type test reports for each solar flat plate collector as per contract specification from any govt. laboratory to the concerned Director (QA). Type test reports shall be complete with authenticated drawing giving complete details of the various component used in the solar flat plate collector. Type test reports shall include all the tests listed in IS: 12933 (part 1) with amdt.no.1 (excluding test requirements as per cl. 7.2.7 and 7.2.8 of IS) and IS: 12933(Part 2)/2003 and also the tests included on various components of solar flat plate collector as per IS: 12933 (pt 2) / 2003 .

12.3 No price escalation due to any reason (including any change in the applicable taxes, duties, surcharge etc.) shall be considered by NEEPCO during the validity/ extended validity of the contract agreement

12.4. In the event of dispute arise during installation & commissioning of the systems related to the work and documents, decision of NEEPCO shall be final.

13. TECHNICAL PARAMETERS AND SCOPE OF THE CONTRACT

13.1. SYSTEM DESCRIPTION:

1000 LPD (20 sq metre) Solar Hot Water Systems at NEEPCO Guest House Guwahati , Solar Flate Plate Collector, Cold water Tank & piping and Hot water piping with accessories

13.1.2 SCOPE OF WORK

1. Design, Supply, Installation, Testing & Commissioning of 1000LPD (20 sq metre) Solar Hot Water Systems at NEEPCO Guest House Guwahati

2. The work will cover installation of Solar Flate Plate Collector, Cold water Tank and piping and Hot water piping with accessories.

3. No electric back up need be provided.. In all locations/bathrooms where electric geysers are already installed, solar hot water storage tank pipe shall be connected to its inlet of the geysers and thermostat if possible, set at around 40 C.

14.0 General Technical Specifications:

14.1 Solar Flat Plate Collector:

Solar flat plate collector shall conforming to IS: 12933 (part 1) with amdt.no.1& 2 and IS : 12933 (Part 2) / 2003 and various components shall be as under:

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 transmittance of the cover plate shall be minimum 82 percent at near normal incidence.

b) Collector Box: Collector box shall be made of Aluminium 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 Aluminium shall be as under :

i) Channel section for sides 1.6 mm
ii) Sheet for bottom 0.7 mm
iii) Support for glass retaining 1.2 mm
iv) Sheet for entire body 1.0 mm

c) Absorber: 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 +/-0.5mm 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 the material used shall be as per section-3 of IS:12933 (pt-2)/2003. Riser and header assembly designed for working pressure up to 24.5 K Pa (2.5kg/cm square) shall be tested for leakage at a minimum hydraulic pressure of 490 k Pa (5 Kg/cm square).

d) Sheet for absorber: Sheet for absorber shall be made of copper only. Type, grade, size, workmanship and finis of the material used shall be as per sectiob-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. There shall not be any appearance of blistering/rupture/peeling off of the coated/painted surface and of weakening of the bonding between absorber sheet and risers/headers.

e) Collector box insulation: 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

f) Gaskets and Grommets: Gaskets and Grommets shall conform to sec.5 of IS: 12933 (pt-2) / 2003.

14.2. Insulated hot water storage tank:

a) Inner tank material: SS 304 or 316 grade min/ MS or any other material with anticorrosive coating for hard water with chlorine contents.

b) Inner tank thickness: For SS minimum thickness will be 0.5 mm when using argon arc or metal inert gas for welding and 0.8 mm when using other type of welding. For MS minimum thickness
will be 1.5 mm. No leakage under any kind of negative or positive pressure of water will be ensured.

c) Inner tank welding: TIG / Seam/ pressurized weld (Open arc weld not permitted)

d) Storage tank capacity: Not less than system capacity. In case of ETC based system, volume of tubes & manifold not to be included in tank capacity.

e) Thermal insulation of tanks: Minimum 50mm thick with CFC free PUF having density of 28-32 kg per Cu.mtr.

f) Outer cladding & Frames: Al/SS/FRP or GI powder coated. MS may also be used with special anti-corrosive protective coatings

14.3. System inter connecting piping:

½ inch (12mm) to 2 inch (50mm) dia Polypropylene pipes conforming to latest BIS specification for use as drinking water supplying pipes and also suitable for carrying hot water up to the temperature of 120 degree centigrade without any considerable loss of temperature of hot water up to the end use point, shall be used for the hot water piping. For building water pipe the insulation shall be 50mm thick with CFC free PUF having density of 28-32 kg per Cu.mtr.

14.4. Support structure for Collectors, piping, tanks etc.:
Of non corrosive material or have corrosion resistant protective coating. They will be strong enough to sustain their pressure during the lifetime of system.

14.5. Other components:

i) **Valves :**Suppliers shall furnish 2 valves, one for inlet and one for outlet. The valves shall be full valves, ISI marked.

i) **Any other component(s) :** Other components essential for completion of the system shall be of ISI marked or as far as practicable. NEEPCO may approved non-ISI marked material ascertain quality.

15.TECHNICAL BID:

15.1 GENERAL

The renderer has to execute the work as per technical requirements and scope of work specified under item 4 above and as per the technical specification of different items are provided in the Annexure I.

Any deviation proposed shall be clearly indicated and described in the format provided under item 15.3 below for each item separately.

15.2 SPECIFIC PARTICULARS:

Specific Particulars of each Major Components to be provided in the format below-

PARAMETERS	GUARANTEED SPECIFIED PARTICULARS
1. Solar Flat Plate Collector	
a) Cover plate:	
b) Collector Box	
c) Absorber:	
d) Sheet for absorber	
e) Collector box insulation:	
f) Gaskets and Grommets:	
2. Insulated hot water storage tank	
a) Inner tank material	
b) Inner tank thickness	
c) Inner tank welding	
d) Storage tank capacity	
e) Thermal insulation of tanks:	
f) Outer cladding & Frames :	
3. System inter connecting piping	
4. Support structure (for Collectors, piping, tanks etc)	
5. Other components	
i) Electrical heaters	
i) Valves	
ii) Any other component(s)	

Note: An undertaking will be given by the manufacturer/supplier confirming to above specifications.

15.3 DEVIATION STATEMENT:

Deviation from stipulated technical parameters (Item 4 in the Tender Document) and Technical Specifications need be incorporated in the statement below. Separate statements may be provided for each item

Reference(Sl.No in the document /Annexure)	Item	Provision	Deviation proposed	Justification for deviation

FINANCIAL BID:

(To be submitted in Envelop –II)

Bidding Schedule

Sr. No	Name of work	Total Cost (Rs.)
1	Design, Supply, Installation, Testing and Commissioning of 1000 LPD Solar Hot water System (with minimum collector aperture area of 20 (Sq. meter) in the NEEPCO Guest House, R.G.Baruah Road, Guwahati-5 complete with Solar Flat Plate Collector, Cold water tank and piping, Hot water piping with accessories and associated civil works. The system should be integrated to the existing electric geysers.	