

## **NOTICE INVITING TENDER**

*(Tender No .1 of 2016-2017)*

*Dated Aizawl, the 6<sup>th</sup> December, 2016*

**No.T-11011/89/2016-CEI (SDA)/2:** Sealed tenders are invited by the Chief Electrical Inspector, Electrical Inspectorate, Power & Electricity Department, Government of Mizoram, State Designated Agency (SDA) on behalf of the Governor of Mizoram from MNRE /BIS approved manufacturers/channel partners of MNRE and their authorized dealers in Aizawl for Supply, Installation, Erection, Commissioning and Annual Maintenance Cost (AMC) for five years of 100 LPD Solar Water Heating Systems at various locations in Aizawl City.

<i>Sl. No.</i>	<i>System Description &amp; Capacity (with/ without Heat Exchanger)</i>	<i>Quantity (Nos.)</i>
1.	Flat plate collector Solar Water Heater 100 LPD	100 (approx)

Tenders shall be received up to 12:00 noon on 6<sup>th</sup> January 2017 and opened on the same date at 1:00 pm. Detail technical specifications can be obtained from the office of the undersigned on payment of Rs. 500/- (Rupees five Hundred only) by cash or demand draft in favour of Chief Electrical Inspector, Electrical Inspectorate, Power & Electricity Department, Government of Mizoram, State Designated Agency (SDA), Zuangtui, Aizawl or can be downloaded from the website [www.sdamizoram.com](http://www.sdamizoram.com) and in that case the bid document fee can be submitted at the time of submission of bids.

The complete tender shall be received up to 12:00 Noon on 6<sup>th</sup> January 2017 and shall be opened on the same date at 1:00 PM.

Chief Electrical Inspector, Mizoram reserves the right to accept or reject any or all offers/bids without assigning any reason thereof.

Sd/-  
(V. RODINGLIANA)  
Chief Electrical Inspector

Memo : No.T-11011/89/2016-CEI (SDA)/2 : Dated, Aizawl the 6<sup>th</sup> December, 2016  
Copy to:-

1. The Secretary & Commissioner to the Government of Mizoram, Power & Electricity Department for favour of information.
2. The Engineer-in-Chief, Power & Electricity Department, Govt. of Mizoram for favour of information.
3. The Secretary, BEE, Govt. of India, Ministry of Power for information.
4. The Director, Information & Public Relation Department, Govt. of Mizoram for favour of information with a requested to publish one issue of the above notice in three local newspapers and also in one national newspaper.

Chief Electrical Inspector

---

**Office** : Electrical Inspectorate, Zuangtui, Aizawl – 796 017, Mizoram.  
**Website** : [www.sdamizoram.com](http://www.sdamizoram.com) **E-mail** : [sdamizoram@rediffmail.com](mailto:sdamizoram@rediffmail.com)  
**Telephone** : 0389 - 2351170, **Fax** : 0389 – 23508

## **SECTION – I** **GENERAL CONDITIONS**

### **1. MINIMUM CRITERION FOR BIDDING**

The bidder must have following minimum criterion for bidding:

- a) The bidder must be an approved BIS/MNRE manufacturer or Channel partner of MNRE and must have ISO 9001 Certification for quality management systems.
- b) The bidder must have ISO 14001 certification for environment requirements.
- c) The bidder must have solar water heating manufacturing facility in India.
- d) The bidder must have experience of supplying, installation and commissioning Solar Water Heating systems for more than 5 (five) years in India.
- e) The successful bidder must establish a service centre in Aizawl.
- f) Manufacturer's authorized dealers or agencies will be allowed to participate in the tender.
- g) The bidder must include the company's profile, brochures, etc

### **2. EXPERIENCE OF THE BIDDER**

A comprehensive list of past projects implemented, by the bidder in India or abroad, indicating clients, dates, size of projects and any other relevant material should be included in the offer. Company should have experience in execution and installation of solar water heating systems in Indian states.

### **3. DOCUMENTATION**

One set of installation manual/user manual shall be supplied along with each system. The manual shall include complete system details such as schematic drawing of the system, working principle, etc. Step by step maintenance and troubleshooting procedures shall be given in the manuals as well.

#### **4. INSTRUCTIONS, TERMS AND CONDITIONS**

- (i) The tender should be in three parts viz. Part I, Part II and Part III as described in Clause 2 below. These should be in separate envelopes duly super-scribed as Part I, Part II, and Part III, NIT No. and due date. Sealed envelopes containing all the three parts should then be placed in a large envelope, which should be sealed, and super-scribed by the given NIT No., due date and name of the bidder.

#### **Clause-2:-**

**PART I:** - Part I of the tender should be super-scribed as "**Part I, Technical Details for NIT No 1 of 2016-17**" and should contain Technical Details:

- a) The bidder ISO 9001 certificate to be enclosed.
- b) The bidder ISO 14001 certificate to be enclosed
- c) The bidder must submit the undertaking/certificates for the materials to be supplied as per the Technical Specification
- d) The bidder must have solar water heating manufacturing facility in India.
- e) The bidder must have experience of supplying and installation of solar water heating system in India. List & Purchase Order copy & performance certificates must be enclosed.
- f) The bidder must have their product tested at one of the IEC approved test centers. Test certificate to be enclosed.
- g) The bidder must establish a service centre in Aizawl, Mizoram.

**PART II:** - Part II of the tender should be super scribed as "**Part II, Commercial Bid for NIT No 1 of 2016-17**" and should contain:

- a) Income Tax Clearance Certificate or HTPC for Tribal Tenderer.
- b) Demand Draft/Department's cash receipt for the purchase of the tender document.

**PART III:** - Part III of the tender should be super scribed as “**Part III, Price Bid for NIT No 1 of 2016-17**” and should contain the price bid for the product as per the bill of material for each solar water heating systems. *The price bid will be in two parts (a) Without Heat Exchanger and (b) With Heat Exchanger.* The supplier has to quote clearly the F. O. T at the site of installation, inclusive of all taxes.

- (ii) The tender should be addressed to The Chief Electrical Inspector, Office of Chief Electrical Inspectorate, P&E Dept. Govt. Of Mizoram, Zuangtui, Aizawl-796017. Both inner and outer covers duly sealed and super scribed and sent either under registered cover or cast in the tender box kept in the office of the Chief Electrical Inspectorate.
- (iii) The bidder shall ensure timely receipt of tender in the office of the **Chief Electrical Inspectorate**, the tenders received by hand or by post after due date of receipt of tenders shall not be entertained even if the tender has been posted/dispatched much before the due date of receipt.
- (iv) The tender will be opened on **6<sup>th</sup> January 2017 at 1:00 PM** in the office of the **Chief Electrical Inspectorate**. On the date of opening of the tenders, the technical and the commercial parts (part-I & part-II) shall be opened in the presence of the bidders who may be present, the price bid (part-III) shall be opened only in case of such bidders who on scrutiny of part-I & part-II of their offer are found to have qualified for opening of the price bid on the same day at the Chief Electrical Inspector's office or any other day at the discretion of the Chief Electrical Inspector. In case the due date of opening of the tenders falls on a holiday being declared subsequently, the tenders will be opened on the next working day.

- (v) Tenders must be complete in all respects; all the terms and conditions of tender including the technical specifications should be carefully studied for the sake of submitting complete and comprehensive tender documents. Failure to comply with any of terms and conditions or instructions of the offer with insufficient particulars which are likely to render fair comparison of tender as a whole impossible may lead to rejection even if otherwise it is a competitive offer/tender.
  
- (vi) Telegraphic tenders or the tenders of such bidder who have not purchased tender document shall not be entertained. Any request by post or by hand or telegraphically for any modification addition or deletion etc. in the tenders shall not be considered.
  
- (vii) The tenders shall be prepared in a formal manner with all quotations written both in figures & words. The tenders shall be typed or written in ink, any tender written by pencil shall be rejected. There shall be no erasures or overwriting and if corrections are made the same shall be neatly done and attested. A systematic form of totaling shall be adopted to avoid any ambiguity. The detailed description of the equipment offered shall be mentioned in an orderly manner.
  
- (viii) The successful bidder must establish a full-fledged service centre with all repairing facilities in Aizawl, Mizoram.

## **5. SPECIAL INSTRUCTIONS**

1. Request for extension in last date of receipt of tenders shall be ignored.
2. The quantity of materials indicated in the Tender is approximate and the purchaser reserved the right to order additional quantity or reduce the quantity of the material advertised at the time of placement of order for which the quoted rate shall be valid.
3. Tender shall be valid for 120 days from the date of opening of the tender.
4. All the Pages of the quotation should be signed and stamped. Pages not signed / or not stamped shall not be accepted as part of the quotation.
5. Authorized Dealers should submit authorized Dealership Certificate issued by their principal manufacturer duly attested by a Gazetted Officer, valid for the current year. Dealership Certificate without the validity shall not be accepted. Original copy of the said Certificate should be produced at the time of opening of Tenders, if demanded by the authority.
6. Non-Tribal Tenders should have to furnish valid ITCC or STCC or PTCC duly attested and the tribal Tenderers should have to furnish valid HTPC or PTCC. All quotations in case of non – tribal Tenderer only, shall be fixed with non – judicial court fee stamp of Rs.8.25 or above.
7. All legal proceedings in connection with the order, tender will be subject to the jurisdiction of local court of Mizoram State, i.e. Guwahati High Court, Aizawl Bench.
8. The prices quoted shall be firm and should be inclusive of taxes. Rate shall be quoted on F.O.T Aizawl.
9. Erection, installation & commissioning charges should be stated separately for each system. Cost of all other accessories that may be required for successful commissioning of the quoted systems should be quoted item wise giving details of the proposed items with their make & specification.

10. Successful Tenderer shall be required to deposit Bank Guarantee amounting to Rs. 1,50,000/- (Rupees One Lakh Fifty Thousand only) as security deposit within 15<sup>th</sup> days after signing the agreement (Form of Bank Guarantee at Annexure ).
11. Payment of 90% materials value shall only be released after delivery of materials and after inspection of the same in respect of quality and quantity. Balance 10% value of materials and the cost of accessories and also the Installation & commissioning shall be released after inspection of the systems installed at various sites.
12. Tenderers having past experience of executing similar jobs should submit copies of orders executed by them during the last three years duly attested by a Gazetted Officer. They should also produce details of their activities and Certificate from their Bankers for financial credibility.
13. Tenderers should inform the name & address of their Authorized Service Centers located at Aizawl, Mizoram who should be fully equipped to carry out necessary erection, installation & commissioning works for the quoted item at any location within Mizoram and also take up Annual Maintenance Contract works for the systems commissioned. Tenders who do not fulfill this condition will be treated as technically not qualified and rejected.
14. Delivery shall commence within one month of issue of details purchase order and complete within 3 month thereafter. Materials should be dispatched only through reputed transporters having Office and telephone at Aizawl.
15. The undersigned takes no responsibility for delay, loss or non – receipt of tender documents sent by post.

16. Tenderers shall have to submit sample of items quoted within 30 days of issue of request letter from Chief Electrical Inspectorate, if required.
17. The Contractor shall be responsible for packing, forwarding, dispatch and insurance of the supplied items.
18. The undersigned reserves the right to accept or reject any tender or all tenders in part or in full without assigning any reason thereof.
19. National Standard for Solar Flat Plate collectors should be as per National Standards (IS-12933) Part I-V of 2003. This standard is enforced through Bureau of Indian standards. The standards include specifications of components of collectors such as cores, absorber, insulation, box, sealants etc. The test certificate as per the guide lines of Solar Energy Centre from any of the BIS approved centers in different regions of the country should be submitted along with the tender.
20. **Force Majeure** : The term '**Force Majeure**' shall herein mean Riots (other than among the Contractors Employees), Civil Commotion (to the extent not Insurable), War (whether declared or not), Invasion, Act of Foreign Enemies, Hostilities, Civil War, Rebellion, Revolution, Insurrection, Military or Unsurped Power, Damage from Aircraft, Nuclear Fission, Acts of God, such as Earthquake ( above 7 Magnitude on Richter Scale), Lightning, Unprecedented Floods, Fires not caused by Contractor's negligence and other such causes over which the Contractor has no control and are accepted as such by the Chief Electrical Inspectorate, whose decision should be final and binding. In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under this Contract, the relative obligation of the Party effected by such Force Majeure shall be treated as suspended for the



period during which such Force Majeure cause lasts, provided the Party alleging that it has been rendered unable as aforesaid, thereby shall notify within 10 days of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of such cause. The Contractor shall verify the fact and grant such extension or as the case may be as fact justify.

21. Any Tender not complying with any of the above mentioned terms and condition in full shall be summarily rejected and no claim whatsoever shall be entertained.

**6. WARRANTY :**

- 1 The Solar Flat Plate collector(s), mechanical structures, storage tank, connecting pipes, heat exchanger etc and overall workmanship of the solar water heating system must be warranted for a **minimum of 5 years.**
- 2 Necessary maintenance spares for five years trouble free operation shall also be supplied with the system.
- 3 The Contractor shall be responsible to replace free of cost (including transportation and insurance expenses) to the purchaser whole or any part of supply which under normal and proper use become nonfunctional within one month of issue of any such complaint by the purchaser.
- 4 In case the Contractor fails to rectify/replace the defective/damaged equipment including transit damage, shortages within one month from the date of intimation of such shortage/damage, they shall have to pay interest to Chief Electrical Inspector, Electrical Inspectorate, P&E Department, Govt. Of Mizoram, Zuangtui, Aizawl-796017. @3% per month on the value of such materials.

**7. HEALTH, SAFETY and ENVIRONMENT:**

The bidder shall submit the following before starting the installation of the solar water heating systems.

- Safety and Environment policy of the Company
- Manuals for Installation.

**8. CLEAN DEVELOPMENT MECHANISM (CDM) BENEFITS :**

All CDM/Carbon Trading benefits from the installation, commissioning and operation of Solar Water Heating systems shall be the property of Chief Electrical Inspectorate, P&E Department, Govt. Of Mizoram.

**9. AGREEMENT :**

The successful bidder(s) shall be required to execute an agreement on a valid stamped paper for strict compliance of the terms and conditions of the contract, viv-a-vis the NIT and the work order within 1 (one) month of placement of the order.

**10. Consignee:** Assistant Electrical Inspector (AEI).

**11. Paying Authority:** Electrical Inspector (EI).

## SECTION-II

# Minimum Technical Requirements

The FPC based systems will be from BIS approved manufacturers. The Systems will have the following minimum requirements for installation.

### General Requirements

- i) System installed in high windy area will be well grouted/ clamped with collectors installed in a way that it is able 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 drawal 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/ small geyser 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.

## **Technical Requirements**

National Standards are brought out by Bureau of Indian Standards. The details of these Standards which contain minimum performance requirements are as follows:

- a) IS 12933 (Part 1):2003, Solar flat plate collector -Specification, Part 1- Requirements.
- b) IS 12933 (Part 2):2003, Solar flat plate collector -Specification, Part 2 - Components.
- c) IS 12933 (Part 3):2003, Solar flat plate collector -Specification, Part 3 - Measuring instruments.
- d) IS 12933 (Part 5):2003, Solar flat plate collector -Specification, Part 5 - Test methods.

These Standards does not apply to concentrating & unglazed collectors and built-in storage water heating systems.

### **Flat Plate Collectors:**

ISI mark (2 sq. m. absorber area for 100 liter tank capacity system in colder region and 125 liter for other regions)

**Storage Tanks, Piping, Support structure etc** (To be all indigenous & not imported)

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

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

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

**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.

**Thermal insulation of storage tanks** : Minimum 50 mm thick CFC free PUF having density of 28-32 kg/ cu.m for domestic systems and 100mm thick Rockwool of 48 kg per cu. m for other systems. For colder regions, it will be 1 ½ times atleast. In case of higher density insulations, the thickness may reduce proportionately.

**Thermal insulation of hot water pipes** : Minimum 50 mm thick Rockwool or 25 mm thick PUF on GI pipes. For colder regions, it will be 1 ½ times at least. In case of composite pipes, it will depend on region to region. For higher density insulations, the thickness may reduce proportionately.

**Outer cladding & Frames** : Al/ FRP or GI powder coated. MS may also be used with special anti-corrosive protective coatings. Thickness of sheets will be strong enough to avoid any deformation of the cladding.

**Valves, cold water tank, vent pipe, heat exchanger, make up tank & instruments** : Of ISI mark or standard make

**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.

## SECTION - III

### TECHNICAL SPECIFICATION OF 100LPD SOLAR WATER HEATING SYSTEM

Sl.No	Description	Specifications
1	System Capacity	100LPD(With or without heat exchanger)
2	System Temperature	80° C
3	Type of Solar Collector	FPC as per IS specifications (2 sq.m)
4	No. of Solar Collectors	01 No/System
5	Applications	Washing, Bathing etc.
6	Circulation	Thermosyphon type
7	Tank type	SS 304 or 316 grade min/ MS or any other material with anticorrosive coating for hard water with chlorine contents, and as per specifications.
8	Overnight temperature drop	5 Degree Celsius
9	Electrical Back-up heater	2 KW with Auto thermostat
10	System Piping	EPDM rubber hose pipe weather resistant super quality
11	Hardness handling capacity	300 PPM Maximum
12	Support stand for Collector	MS painted structure epoxy pre-coated
13	Sacrificial Anode	To protect tank from corrosion due to dissolved minerals, Chlorine etc.

## **SECTION - IV**

### **PRICE BID**

<b>Sl. No.</b>	<b>Description of Items</b>	<b>Unit</b>	<b>Rate/System</b>
1.	Supply of 100LPD Flat Plate Collector Solar Water Heating System (With/Without Heat Exchanger) at various locations in Aizawl City.	Set	
2.	Installation/Erection of the above set.	Set	
3.	Comprehensive Annual Maintenance Contract charges for consecutive five years from the date of commissioning (Inclusive of Service Taxes)	L.S	
	<b>Total</b>		