

MEGHALAYA NON-CONVENTIONAL AND RURAL  
ENERGY DEVELOPMENT AGENCY.

TENDER DOCUMENT  
FOR  
SUPPLY OF 2000 NOS. OF 3W  
LED BASED SOLAR LANTERNS  
IN THE STATE OF MEGHALAYA.

1. NIT No.MNREDA/15/1527/2012/-13/ 1                      Dated :15.12.12.
2. Date of Issue of Tender Document                      }                      20<sup>th</sup> December, 2012 to 22<sup>nd</sup> January, 2013.
3. Date of Submission of Bid                      :                      The 24<sup>th</sup> January, 2013 at 2013 at 2 p.m.
4. Date of opening of Bid                      :                      The 24<sup>th</sup> January, 2013 at 2013 at 3 p.m.
5. Cost of Tender Document                      :                      Rs.1000 /- (Rupees One thousand) only.

6. Tender Issue To :- \_\_\_\_\_

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Issued by :- \_\_\_\_\_

Member Secretary- cum-Director  
Meghalaya Non-Conventional and Rural Energy  
Development Agency, Shillong.

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# MEGHALAYA NON-CONVENTIONAL AND RURAL ENERGY DEVELOPMENT AGENCY

Near BSF Camp Mawpat, Shillong-793012.  
Phone No.0364-2537343/2536138## Fax No.0364-2537611  
E-Mail : [mnreda.dir@gmail.com](mailto:mnreda.dir@gmail.com) ## Website [www.mnreda.gov.in](http://www.mnreda.gov.in).

## 1. NOTICE INVITING TENDER

No. MNREDA/1527/2012-13/1 :- Tenders with 60(sixty) days validity are invited from those Firms who is having valid Test Report approved by Govt. of India, Ministry of New and Renewable Energy, for supply of (i) 2000 Nos. of Solar LED Home Lighting System of 2 light Points and (ii) 2000 Nos. of LED Solar Lantern with 5 Wp Modules, 6 volt, 4.5 AH Battery.

Tender paper will be issued w.e.f 20.12.2012 to 22.1.2013 on payment of tender cost of (i) Rs.2000/- (Rupees two thousand) only and (ii) Rs.1000/- (Rupees one thousand) only. last date of submission of tender is on 24.1.2013 at 1.00 p.m. for item No.I and 2.00 p.m. for item No.(ii) and opened on 24.1.2013 at 2.00 p.m. for Item No.1 at 3.00 p.m. for Item No.(ii).

Sd -  
Director.

Memo.No.MNREDA/1527/2012-13/1(a) Dated Shillong, th1 15<sup>th</sup> December, 2012.

copy to :

1. The Indian Express Ltd.  
(Financial Express, All)  
23, Dr. S.K.Bhuyan Road,  
Digholi Pukhuri (East)  
Guwahati-781001(India)  
Fax No.0361-2548751.

With a request to publish in classified advertisement in one issue of your newspaper. Bill in duplicate may be submitted to the undersigned for payment.

2. NIC
3. Office Notice Board
4. File No.MNREDA/1529/2012-13

Sd -  
Director.

2. **Instruction to Tenderer :-**
- i) The cost of tender papers or document should be in the form of Cash/Bankers cheque/Demand Draft(Non-Refundable) drawn in favour of Member-Secretary-cum-Director, Meghalaya Non-Conventional and Rural Energy Development Agency, Shillong.
  - ii) Tender Document will be issued by Courier or speed post on request but extra payment of Rs.200/- (Rupees two hundred) only should be made by Demand Draft towards cost of speed post or courier.
  - iii) Local Dealer of any manufacturer or supplier will be issued tender document but on furnishing of their Dealership Certificate and tender document will be issued in principal's name.
  - iv) In the event of postal delayed, MNREDA shall not be held responsible.
  - v) Tender document will be issued on any working days within the specified date.
  - vi) In case the opening date is declared as holiday tender shall be open in the next working day at the same time and hour.
  - vii) Tenderer are to furnish their offer in a sealed cover envelope.
  - viii) Commercial Terms and Conditions specially indicating deviations to the terms and conditions stipulated in detailed tender papers including payment terms etc. must be clearly specify in case of any deviation with justification therein.
  - ix) The price quoted should be firm and as per the format provided in the tender document and should inclusive of all Taxes and duties.
  - x) Any other particular information, which are required to be furnished as per detailed tender papers but which have not been specifically indicated.
  - xi) The rate should be legible written in English both in figure and in words. In case of any dispute between the figure and words the letter shall be prevailed.
  - xii) Earnest Money Deposit of 1% for Schedule Tribe and Schedule Cast and backward classes and 2% for general on the amount quoted in the form of Bank Guarantee / Call Deposit / FDR from any Scheduled or Nationalized Bank of India pledged in favour of Director MNREDA, Shillong should be furnished without which tenders will be rejected.
  - xiii) The system are to be supply to all the 7 (seven) District Head Quarter of MNREDA, Office.

- xiv) Test Report of System from any Testing Centre approved by MNRE should be submitted and issued after January, 2011.
- xv) The bids shall be submitted in two parts i.e. (i) Commercial Terms and Conditions and Technical Bid. (ii) Price Bid in a separate Sealed envelope. The following should be clearly indicate on the body of the Sealed envelopes.
  - (a) N.I.T. No.
  - (b) Whether Techno-Commercial Bid or Price Bid.
  - (c) Name of the bidder
  - (d) Both the envelope should be placed in the outer Envelope and Sealed.
- xvi) The Price Bid of only those Tender who had complied to the General and Commercial Terms and Conditions to the and Technical Specification as per Test Report will be opened. Those Tenderer who are not qualify their price bid envelope will be returned unopened.

### 3. General/Commercial Terms and Conditions :-

- i) **Signing of tender paper** :- The Tender document as issued by MNREDA should be sealed and signed by the Authorized person of the firm and it will be view as acceptance of each and every conditions containing therein.
- ii) **Attestation** :- All Xerox supporting papers which is not original should be duly attested by the Gazetted Government official.
- (iii) **Value Added Tax** :- VAT Registration and VAT clearance certificate upto March, 201 2 should be furnished along with the Bid.
- (iv) **Time of Completion** :- The supply should be completed within 90 (ninety) days from the date of issue of work order.
- (v) **Trading License** :- The successful bidder shall have to produce a Trading License from the proper authority before supplied the system.
- (vi) **Agreement** :- An Agreement has to be signed within 7(seven) days of issues of final work order. The Agreement shall be prepared by the purchaser on a stamp paper duly signed by the authorize person of the firm and purchaser. The tender document as issued along with the Bid as submitted by the bidders along with supporting papers shall be part and parcel of the agreement.

(vii) **Submission of Bid** : The following order should be arrange while submitting the Bid:-

- (a) Forwarding letter in a letter Head of the Firm.
- (b) VAT Registration certificate.
- (c) VAT Clearance certificate.
- (d) Test Report of Solar Lantern from approved Testing Centre.
- (e) Experience Statement along with Documentary proof.
- (f) Technical Specification as per Tender Document in a separate sheet (as per section 4. item J)
- (g) Tender Document Sign and Seal issued by MNREDA.
- (h) Price Bid in a seal cover envelope (should contain EMD or exceptional certificate along with price quoted as per format in the Tender Document.
- (i) Any other document desired by the Firm to support their offer.

The above order of Submission should be followed strictly without which offer will be returned or not consider and entertained.

(viii) **Warranty & Maintenance** :- The system should be guarantee for a period of 2 (two) years from the date of receipt of system from any manufacturing defect and maintained for 3 (three) years after the end of the warranty period.

(ix) **Payment Terms and Conditions** :- The Bidders shall be entitled to the Following payment terms:-

- (a) The contractor shall be paid 30% (thirty percent) of value as mobilization advance against a Bank Guarantee of equivalent/like amount from any Nationalized Bank or Scheduled Bank valid for a period of 90( sixty) days from the date of acceptance of work.
- (b) 60% (sixty percent) of the contract value of the system shall be paid against receipt of materials at our District Office in good conditions.
- (c) Balance 10% (ten percent) to be paid at the end of 2(two) years of warranty period or against submission of Bank Guarantee of equivalent/like amount valid for a period of two years from the date of distribution of systems.

In the event of contractor not being able to supply or to carry out the work or a part of the work assigned to him in accordance with the terms of this contract, the purchaser shall have the right to recover any sums advanced from the contractor from his/its assets/amount submitted as mobilization advance.

- (x) **Write up of System** :- The write up in English about functioning of the system shall have to be supplied along with system and one copy should be submitted along with the Bids.
- (xi) **Experience** :- It is mandatory the bidders should have an experience of supplying at least 500 units LED based Solar LED Home Lighting System to any Govt/Semi Govt./PSU in the Last financial year. Details of such work order and experience shall have to be supported with document proof.
- (xii) **Financial Soundness** : Documentary evidence to support the Financial Soundness of the Tenderer should be furnished.
- (xiii) **Service Centre** :- It is mandatory that the manufacturer or Supplier should have a local service centre in the state, and preference will be given to those firms who have got enough Experience in North East Region.
- (xiv) **Exemption of EMD** :- The Manufacturer or Supplier who claim exemption shall have to furnish and SSI Registration Certificate issued by NSIC.
- (xv) **Delivery of System** :-
- (a) The contractor shall deliver the systems in accordance with the terms of the contract at the time/times at the place/places and in the manner specified in the contract. The contractor shall comply with instructions that may be given by the purchaser from time to time regarding the transit of the plant and material.
  - (b) Notification of delivery or dispatch in regard to each and every consignment shall be made to the purchaser immediately after dispatch or delivery. The contractor shall supply to the consignee invoice in duplicate and packing account of all stores delivered or dispatch by him.
  - © In case of any occurrence of loss or damage in transit upto destination, it shall be liability of the contractor to initiate or pursue the claim with Insurance Company. He should take immediate steps to repair the damaged apparatus or replacement thereto. Any extension of time limit required in such contingency will be considered by the purchaser on merit.

**(xvi) Inspection of Materials :-** The materials will be dispatched to the Supplier after the inspection by the Director, MNREDA or his authorized representative at his premises at site and acceptance of the same. MNREDA reserve the right to test maximum of 5% of all materials supplied.

**(xvii) Arbitration :-**

- (a) Except where otherwise provided if anytime question dispute or difference whatever shall arise between the contractor and the purchaser upon or in the relation to or in connection with this contract either of the parties may give to the other notice in writing of the existence of such a question on rejection of the matter, the dispute or difference shall be referred to the sole arbitration appointed by MNREDA at the time of dispute after ascertaining the terms of reference mutually.
- (b) The Arbitration will preferably be a member of Arbitration Council and arbitration proceeding will take place as per provision or arbitration Act 1940 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply.
- (c) The contractor will ensure that the work under this contract shall continue during arbitration proceeding and dispute and no payments due from or payment by the purchaser shall be withhold on account of such proceeding except to the extent which may be in dispute.

**(xviii) Court of Competent Jurisdiction:-**

The Courts of Guwahati High Courts, Shillong Bench will only have jurisdiction in this case.

**4. TECHNICAL SPECIFICATIONS OF THE 3W LED SOLAR LANTERN**

**A. PV Module**

- (i) The PV modules must conform to the latest edition of any of the following IEC/equivalent BIS Standards for PV Modules design qualification and type approval:  
  
Crystalline Silicon Terrestrial PV modules : IEC 61215/ISI4286  
  
Concentrator PV Modules & Assemblies : IEC 62108



- (a) PV Modules used in system must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years. Capacity of the module should be more than 5 watts at load voltage of  $16.40 \pm 0.2V$  under STP. The PV module should be approved test report of Test centre approved by MNRE.
- (b) The terminal box on the module should have a provision for opening it for replacing the cables, if required.
- (c) The module should preferably have an arrangement(stand) for mounting at the optimum angle in the direction facing the sun.
- (d) The PV modules must be tested and approved by one of the IEC authorized test centers. Test certificates can be from any of the NABL/BIS Accredited Testing/Calibration Laboratories. Qualification test certificate as per IEC standard, issued by the Solar Energy centre for small capacity modules upto 37 Wp capacity will also be valid.
- (e) Each PV module used in any solar power project must use a RF identification tag (RFID), which must contain the following information. The RFID can be inside or outside the module laminate, but must be able to withstand harsh environmental conditions.
  - (i) Name of the manufacturer of PV module
  - (ii) Name of the Manufacturer of Solar cells
  - (iii) Month and year of the manufacture (Separately for solar cells and module)
  - (iv) Country of origin (separately for solar cells and module)
  - (v) I-V curve for the module
  - (vi) Peak wattage, IM, VM and FF for the module
  - (vii) Unique serial No. and model No. of the module

- (viii) Date and year of obtaining IEC PV module qualification certificate
- (ix) Name of the test lab issuing IEC certificate
- (x) Other relevant information on traceability of solar cells and module as per ISO 9000 series.

**(B) Lamps**

- (a) The lamp will be white light emitting diode (W-LED) diffused and soothing to eyes.
- (b) The luminous performance of LEDs used should not be less than 60 lumen per watt.
- (c) Use of LEDs, which emit ultraviolet light, are not acceptable.
- (d) The light output from the light source should be constant during the specified duration.
- (e) LED of only the manufacturers, i.e. Nichia/CREE/OSRAM/Philips Lumileds/SEOUL or LEDNIUN in the lamp shall be accepted.
- (f) The LED make, model number and technical characteristic of lamp should be furnished along with offer.
- (g) The LED should be top mounted or pillar mounted in such a way that it should also illuminate the base.
- (h) The illuminance (LUX) when measured from a distance of 1 feet away from the centre point of the bottom of the lantern in the same plane of horizontal should be min. 60 lux. Light coverage should 360 degree.

**C. Battery**

- (a) The battery shall be sealed maintenance free (SMF) of reputed make.
- (b) The capacity of the battery will be a minimum of 4.5 AH at 6V at C/20 discharge rate at 27° C.

- (c) 75% of the rated capacity of the battery should be between fully charged and load cut off condition.

#### **D. Electronics**

- (a) The total electronic efficiency should be at least 80%
- (b) The idle current consumption in the charge controller should not be more than 1 mA.
- (c) Electronics should operate at 6.0V and should have temperature compensation for proper charging of the battery throughout the year.
- (d) The light output should remain constant with variation of the battery voltage.
- (e) Necessary lengths of wire/cables (min.5 meters), switches suitable for DC use and fuses should be provided.

#### **E. Duty Cycle**

The LED solar lantern should provide a minimum of four hours of lighting per day under average daily solar radiation conditions of 5 kWh//sq.m. on a horizontal surface with one day back up i.e. total 8 hours in a charge. The actual duration of lighting may vary depending on the location, season etc.

#### **F. Electronic Protection**

- (a) Adequate protection is to be incorporated under no load conditions(e.g. when the lamp is removed and the lantern is switched ON).
- (b) Battery cut offs and reconnects should be provided to protect it against overcharge and deep discharge condition.
- (c) A fuse should be provided to protect against short circuit conditions.
- (d) A blocking diode, preferably a Schottky diode, should be provided as part of the lantern electronics to prevent reverse flow of current through the PV module, if such a diode is not provided with the module itself.
- (e) Full protection against open circuit, accidental short circuit and reverse polarity should be provided.

## **G. Other Features**

- (a) Two LED indicators one for a green light to indicate charging in progress, and another red LED to indicate deep discharge conditions of the battery suggesting that load should be switched off and the battery must be charged immediately should be provided on the body of the lantern. The green LED should glow only when the battery is actually being charged.
- (b) The On/Off switch used in the lantern must be suitable for use in DC circuits and be reliable with long life. Use of electronic switch is allowed. A cable (2 core x 1.5 sq.mm) of suitable length (at least 5 meters) should be provided for interconnection between the module and the lantern.
- (c) The following details should be marked indelibly on the lantern;
  - Name of the Manufacturer or Distinctive Logo.
  - Model Number

## **H. Additional features**

- (a) Dimming facility of 1/3 level must be provided
- (b) Mobile charging socket should be provided. It should charge mobile phone during night also.

## **I. Warranty :-**

- (a) The mechanical structures, electrical works including power conditions/inverters/charge controllers/maximum power point tracker units/distribution boards/digital meters/switchgear/storage batteries etc. and overall workmanship of the systems must be warranted against any manufacturing/design/installation defects for a minimum period of 5 years.
- (b) PV modules used in solar systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.

**J. Technical Requirement for Solar LED based Lantern :-**

- (i) Load :- 3 watt white LED light
- (ii) Operational Hours :- 4 hours average daily
- (iii) System normal voltage :- 6 volt DC
- (iv) Daily Load in AH :- 4.5 AH
- (v) Battery sizing :- 4.5 Ah at 6 volt
- (vi) Solar Panel :- 5 watt at 6 volt

**The specification should be furnished below in a separate sheet (without which specification will be rejected) :-**

**1. BATTERY :**

- i) Make
- ii) Type of battery
- iii) AH capacity
- iv) Efficiency
- v) Battery Rating
- vi) Discharge rate
- vii) Battery Box Material
- viii) Sl.No. & Date (Has to provide on supply)

**2. DUTY CYCLE :-**

- i) No. of light point
- ii) Average hour of operation/day

**3. MODULE :-**

- i) Make
- ii) Type of Module
- iii) Efficiency
- iv) Maximum Wattage
- v) Operating Voltage
- vi) Sl. No. & Date (As per Test Report)
- vii) Test Report from (Authorized Test Centre should be submitted and accepted upto 37 Wp capacity Modules)

**4. LAMPS :-**

- i) Make
- ii) Type of lamps
- iii) Light output

**5. ELECTRONICS :-**

- i) Name of manufacturer
- ii) Model/Type No.
- iii) Idle current
- iv) Total electronic efficiency
- v) Operating Voltage of the electronic circuit
- vi) Type of Inverter (sine wave /quasi sine wave)
- vii) Type of protection provided

- viii) Whether protection against battery overcharge or deep discharge provided
- ix) Prevention of reverse current provided or not
- x) Full protection against open circuit, accidental short circuit and reverse polarity provided or not.
- xi) Mobile charging provision.

**5.PRICE SCHEDULE :**

Sl. No.	System description	Quantity	Unit	Unit Price (Rs.)	Total price (Rs.)
1.	3 W LED based Solar Lantern FOR Shillong including Transportation, Packing, Taxes and Duties and any other expenses	2000	Nos.		
2.	Local transportation an distribution	2000	Nos.		
	Total				

(Rupees \_\_\_\_\_) only.

(Signature of the authorized signatory)

Name :- \_\_\_\_\_

Designation :- \_\_\_\_\_

Company Seal :- \_\_\_\_\_