

# MEGHALAYA NON-CONVENTIONAL AND RURAL ENERGY DEVELOPMENT AGENCY

Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong - 793 012  
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)

## NOTICE INVITING TENDER


NIT No. MNREDA/1665/2016/9

Dated Shillong, the 8<sup>th</sup> August, 2016.

Sealed tenders are invited from eligible registered Indian Manufacturers (manufacturers means manufacturer of SPV modules or battery or Solar Charge Controller or LED Luminary) or MNRE Channel partner. Supply, Installation, Commissioning of 4000 Nos.LED based Solar Street Lighting System at different locations in the State of Meghalaya, with two years warranty and three years mandatory comprehensive maintenance contract (CMC).

Tender documents will be issued during working days from **09.08.2016 to 26.08.2016** in the office of the undersigned on payment of Rs. 10,000.00 (Rupees ten thousand) only in cash or bank draft or can be downloaded from website of MNREDA ([www.mnreda.gov.in](http://www.mnreda.gov.in)). Tender documents shall be received in the office of the undersigned up to **29.08.2016** at 13.00 hrs and shall be opened at the same place and on the same date at 3.00 pm.

The undersigned reserves the right to cancel the tender and/or reject any or all of the bids without assigning any reason thereof.


  
Member Secretary Cum- Director  
Meghalaya Non-Conventional & Rural  
Energy Development Agency

Memo. NO.MNREDA/1665/2016/9-A

Dated Shillong, the 8<sup>th</sup> August, 2016.

Copy To :-

1. P.S.to the Principal Secretary to the Govt.of Meghalaya, Power Department.
2. The State Informatic Officer, National Informaties Centre, Meghalaya, Shillong. With a request to display the NIT & Tender document on the MNREDA website both in Hard & soft copy.
3. The Eastern Chronicle, Shillong. With a request to publish in one issue of your Newspaper and to submit the bill in duplicate Along with sample for necessary payment.

  
Member Secretary Cum Director,  
Meghalaya Non-Conventional & Rural  
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## **NOTICE INVITING TENDER**

**For**

**Supply, Installation and Commissioning**

**Of**

**LED Solar Street Lighting System**

**at different locations**

**in the State of Meghalaya**

**for the Financial Year 2016-17**

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RURAL ENERGY DEVELOPMENT AGENCY**

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Dated Shillong, the 8<sup>th</sup> August, 2016.

Tender document issued to M/S \_\_\_\_\_

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against application vide letter No. \_\_\_\_\_

dated \_\_\_\_\_ and payment of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_

\_\_\_\_\_ ) only by Cash/Bank Draft No. \_\_\_\_\_ Dated \_\_\_\_\_

of \_\_\_\_\_ Bank towards the processing fee

of Tender Document for Solar Street Lighting System. (Part – A and Part – B)

*Issued By:*

**For Member Secretary cum Director**

**Meghalaya Non-Conventional & Rural**

**Energy Development Agency.**

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## **PART – A**

### **Commercial & Technical Bid**

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Newspaper and to submit the bill in duplicate  
Along with sample for necessary payment.

Member Secretary Cum Director,  
Meghalaya Non-Conventional & Rural  
Energy Development Agency

## **INSTRUCTION TO BIDDER**

### **1. Minimum Criterion for Bidding:**

1.1 The bidder must have the following minimum criteria to qualify for bidding:

- (i) The bidder should be registered Indian company/Firm registered as manufacturer of SPV modules or battery or Solar Charge Controller or LED based Luminary or MNRE Channel Partner under JNNSM.
- (ii) The bidder should have their products approved by MNRE/ IEC.
- (iii) The bidder should have an average annual turnover of Rs. 1.5 crore (One Crore & Fifty lakh) in the last three years. Certified Audited Balance sheet for the last three years should be submitted.
- (iv) The bidder should have cumulative experience of having executed similar projects in the Northeast Region. Certified work order and satisfactory report from project owners should be enclosed.
- (v) The bidder must have adequate service network for maintenance of the system in North Eastern Region.
- (vi) The bidder must have valid VAT registration certificate.
- (vii) The bidder should have adequate financial stability and status to meet the obligation pursuant to the scope of works. Certified copies of their profits and loss account for the last 3(three) years must be submitted alongwith the bid.

Non-submission of above documents may result in rejection of bid.

### **2. Tender Document**

In addition to this Tender document, any other documents/instructions/amendments/revisions issued by MNREDA to the bidder till the due date of opening of the bid shall also be deemed to be integral part(s) of the bid document. Failure to furnish all the information as per the bid document in every respect shall result in rejection of bid.

### **3. Processing Fee of Tender Document**

3.1 Tender document can be purchased from MNREDA office on payment of Tender processing fee of

Rs. 10,000/- (Rupees Ten Thousand) only either by cash or Bank Draft drawn in favour of Director, MNREDA, Shillong.

3.2 Bidders may also download the bid document from MNREDA website and submit the processing fee of the bid document as indicated at 3.1 above in the form of Demand Draft along with Part – A (Technical Bid).

Non-submission of Cost of Tender document shall result in rejection of bid.

#### **4. Earnest Money**

- 4.1 Refundable Earnest Money Deposit (EMD) of Rs. 8,00,000.00 (Rupees Eight Lakhs) in the form of Bank Demand Draft from any Scheduled or Nationalized Bank in favor of Member Secretary-cum-Director, payable at Shillong should be furnished without which the tender will be summarily rejected.
- 4.2 The bidders who claim exemption of EMD shall have to produce relevant papers from the proper authority i.e. NSIC registration certificate etc.
- 4.3 EMD shall be returned to the bidders after successful installation and commissioning of the systems.

#### **5. Submission of Bid**

The bid should be submitted latest by the date and time indicated in the NIT. The bid should be submitted in 2 (two) parts i.e. Commercial & Technical Bid and Financial Bid.

##### **5.1 Commercial & Technical Bid: consisting of the following documents:-**

- i. Tender Paper (Part – “A”) duly signed and sealed by the authorized person(s) of the firm.
- ii. Cost of Tender document, if downloaded, or certified copy of money receipt for the tender document issued by MNREDA.
- iii. Data Sheet duly filled up and completed as per tender document.
- iv. Documents required under Minimum Qualifying Criteria for Bidding.
- v. Any other documents as mentioned in the tender document.
- vi. Earnest Money Deposit

##### **5.2 Financial Bid: consisting of the following documents:-**

- i. Tender Paper (Part – “B”) duly signed and sealed by the Authorized person(s) of the firm.
- ii. Price Bid can be quoted on plain paper but it should be in the format given.

5.3 Commercial & Technical Bid should be sealed in a separate envelope, hereinafter referred to as First Envelop, marked as “Commercial & Technical Bid”.



- 5.4 Commercial & Technical Bid should not contain price of any item(s) otherwise the bid shall be rejected.
- 5.5 Financial Bid should be sealed in a separate envelope, hereinafter referred to as the Second Envelope marked as “Financial Bid”.
- 5.6 Financial Bid should not contain any technical matter or any other matter except the price bid and the EMD. The date of opening of the price bid will be notified to qualified bidders after Commercial & Technical bid evaluation.
- 5.7 First Envelope and Second Envelope should be sealed in a third envelope marked as “LED Based Solar Street Lighting Systems at different location in the State of Meghalaya” along with NIT No. Date of opening of tender, Name & Address of the bidding firm and should be addressed to Member Secretary-cum-Director, Meghalaya Non-Conventional And Rural Energy Development Agency, Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong – 793 012.

## **6. Opening and Evaluation of Tender**

- 6.1 On the date and time indicated in the NIT Schedule, only the outer envelope and First Envelope shall be opened. If the cost of the tender document is found to be in order, then the Technical & Commercial bid document shall be accepted and kept for evaluation. Otherwise, the tender document shall stand rejected and shall be returned to the bidder.
- 6.2 The bid document which is accepted shall be evaluated first as per the qualifying criteria and if found to be qualified, the technical and commercial bid shall be evaluated.
- 6.3 If the bid document is not qualified as per the qualifying criteria, it shall be treated as non-responsive and the Technical & Commercial bid shall not be evaluated and shall be returned to the bidder.
- 6.4 Only the bidders whose Technical & Commercial bids are responsive shall be eligible for opening of the financial bids.

## **7. Opening of Financial Bid**

Date of opening of Financial Bid shall be intimated individually to the firm which qualified for Commercial and Technical offer.

- 7.1 The price quoted should be firm and valid for 12 (Twelve) months from the date of opening of the price bids. The price should be quoted as per the format provided in the tender document. Price break-up of various components must be clearly indicated in the format and failure to comply with the above shall result in rejection of the Bid.
- 7.2 The rate should be written in English, both in figures and in words. In case of any differences between the prices mentioned in figures and words, the prices mentioned in words shall be considered as final. Also, in case of any arithmetical error in regard to the total amount and individual rates, the individual rates shall be taken as final and the total amount shall be calculated accordingly.

## 8. Award of Contract

MNREDA would distribute the work to the first 3(three) lowest quoted rates i.e. L<sub>1</sub> – 50%, L<sub>2</sub>- 30% and L<sub>3</sub>-20% provided that L<sub>2</sub> and L<sub>3</sub> are willing to supply the specified items at the rates quoted by L<sub>1</sub>.

## 9. Additional Information

Any other particular information which are required to be furnished as per detailed tender papers but which have not been specifically indicated should also be furnished.

## 10. Deviation

Any deviations to the terms and conditions stipulated in detailed tender papers including payment terms etc. must be clearly specified with justification.

## 11. Postal

No postal transaction shall be entertained.

## 12. Attestation

All supporting papers (photocopies) which are not in original should be duly self-attested.

## 14. Other Terms & Conditions

- 14.1 Insertion, post-script, addition and alteration shall not be recognized unless confirmed by bidder's signature and stamp.
- 14.2 Incomplete tender or tenders not submitted as per requirement as indicated in the NIT are likely to be rejected.
- 14.3 Bidders shall submit their offer strictly as per terms and conditions of the tender document without any deviation.
- 14.4 Failure to furnish all information and documentary evidence as stipulated in the bid document or submission of an offer that is not substantially responsive to the bid document in all respects shall be summarily rejected.
- 14.5 All bids will be received in duly sealed cover within the due date and time. Bids received after the due date and time is liable for outright rejection.
- 14.6 MNREDA reserves the right to reject part or whole of the bid/order without assigning any reason thereof, postpone the date of receipt and opening of the bids or cancel the bid without bearing any liability, whatsoever, consequent upon such decision.
- 14.7 Issuance of bid documents shall not construe that the bidders would be automatically considered qualified.
- 14.8. The Technical Data Sheet for submission of Technical Bid is given at **Annexure-I**. The Bidder whose Technical Bid is found to be acceptable, settled, and frozen shall be considered for opening of respective Financial Bids.
- 14.9. No tender will be accepted after the deadline for submission of tender mentioned in the NIT or subsequent corrigendum (s)/Notification(s) extending the last date of receiving the tenders, if any.

## **GENERAL TERMS & CONDITIONS**

### **1. Signing of Tender Paper**

The Tender Document as issued by MNREDA should be signed on every page by the Authorized person of the firm and it will be viewed as acceptance of each and every condition containing therein.

### **2. Time of Completion**

The work shall be completed within 180 (One Hundred Eighty) days from the date of issue of final work order.

### **3. Agreement**

- (a) An Agreement has to be signed within 15 (fifteen) days of issue of final work order. The Agreement shall be prepared by the PURCHASER as per NIT on a stamp paper duly signed by the authorized person of the Firm and MNREDA. The annual maintenance contract agreement shall be separately signed on completion of installation and commissioning of the system.
- (b) The successful bidder shall submit a detailed PERT Network/Barchart compering adequate number of activities covering various key phases of the work such as design, procurement, manufacturing, transportation and field activities within fifteen(15) days from the date of letter of Award of Contract.

### **4. Warranty**

- (i) The Street Lighting System (including the battery) will be warranted for a period of 5 (five) years and the Module should be warranted for a period of 25 years from the date of Installation and Commissioning of the System.
- (ii) The successful bidder shall furnish to the office of the undersigned, within one month from the date of issue of work order, the details of establishment of service centers.
- (iii) During the warranty/guarantee period, Director, MNREDA/Project Officer (Solar) MNREDA reserves the right to cross-check or cause cross-checking of the performance of the systems.
- (iv) Warranty/Guarantee Card should be approved by MNREDA before issue.
- (v) Whenever a complaint (in writing or telephonically) is lodged by the user/MNREDA/Project Officer (Solar), the bidder shall attend to the same within a reasonable period of time of 2(two) days. In case if the material or major component needs to be rectified/replaced, the same shall be corrected or replaced within a period not exceeding 7(seven) days from the date of complaint, failing which MNREDA will make the system functional and debit the expenditure to the party which will be deducted from the remaining payment due to the firm (security deposit) and the defaulter manufacturer will be blacklisted along with the penal actions as deemed fit by MNREDA.

### **5. Payment Terms and Conditions**

**The Bidders shall be entitled to the following payment terms:**

- (a) Mobilization Advance: The contractor shall be paid 30% (thirty percent) of the contract value as mobilization advance against a Bank Guarantee of like amount from any Nationalized Bank or Scheduled Bank valid for a period of 180 (One Hundred Eighty) days from the date of acceptance of work.

- (b) 50% (fifty percent) of the contract value of the system/equipment shall be paid against receipt of materials at site in good condition, subject to availability of funds.
- (c) 10% (ten percent) of the contract value of the system/equipment along with other payments shall be paid on complete Installation and Commissioning, subject to availability of funds.
- (d) Balance 10% (ten percent) to be released at the expiry of warranty period and submission of performance report duly certified by the concerned Project Officer/ user or against Bank Guarantee of equal value valid for a period of 2(two) Years.

#### **6. Subletting of Contract**

The Contractor shall not, assign or sublet or transfer his contract, or a substantial part thereof, provided that any such consent shall not relieve the contractor from any obligation, duty or responsibility under the contract, in whole or in part its obligation to any third party to perform the order/contract.

#### **7. Contractor to Inform Himself Fully**

- (a) The Contractor shall be deemed to have carefully examined the general conditions, specification and Schedules and also to have satisfied himself as to the nature and character of the plant and equipment to be supplied and installed under the contract, the site conditions and all relevant matter and details.
- (b) If he shall have any doubt as to the meaning of any portion of the contract/work order, he shall before signing/accepting it, set forth the particulars thereof and submit them to the MNREDA in writing in order to remove such doubts.

#### **8. Service Center**

It is mandatory that the bidder should have a local service center in the North Eastern Region and preference will be given to those Firms who have the service Centre in the State of Meghalaya. It will be mandatory to have a service Centre located in the District /Sub-Division under which the work will be executed. A declaration in this regard must be attached with the Bid, failing which the Bid shall stand to be rejected.

#### **9. Breach/ Cancellation of the Contract**

In case of non-performance in any form or change of the covenants and conditions in this contract by the contractor, MNREDA shall have the power to annul, rescind, cancel or terminate the contract and upon its notifying in writing to the contractor that it has so done, this contract shall be so absolutely determined. The decision of MNREDA in this regard shall be final and binding.

#### **10. Responsibility of the Contractor**

The contractor shall guarantee and be entirely responsible for the execution of the contract in accordance with the specifications, schedules and appendices. He shall further guarantee and be responsible for the quality and workmanship of all materials and completed works, correct designs, drawings, correct delivery of materials, erection, testing and commissioning, within the warranty. The Bidder should submit a manufacturer's authorization letter declaring warranty of Solar Modules as per MNRE, failing which The Bid shall stand to be rejected. On completion of commissioning, a separate agreement shall have to be signed in respect of a comprehensive annual maintenance contract for a period of three years after the warranty period.

## **11. Safety Measures**

The Contractor shall have to undertake necessary measures for providing adequate safety and precautions to avoid any accident which may cause damage to any equipment/material or injury to workmen. MNREDA shall not be responsible for any such accidents.

## **12. Delivery of System**

(a) The contractor shall deliver the plant/systems in accordance with the terms of the contract at the time and place/places and in the manner specified in the contract. The contractor shall comply with all 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 the invoice(s) in duplicate and packing account of all stores delivered or dispatched by him.

(c) In case of any occurrence of loss or damage in transit up to destination, it shall be the liability of the contractor to initiate or pursue the claim with Insurance Company. He should take immediate steps to repair the damaged apparatus or effect replacement thereto. Any extension of time limit required in such contingency will be considered by the purchaser on merit.

## **13. Inspection of Material**

The material shall be dispatched by the supplier after inspection by the Director-cum-Member-Secretary, MNREDA /Project Officer (Solar). The supplier shall give 7 day's written notice of any material ready for inspection. The material shall be utilized and installed in the project only after acceptance of the same. The installation of the work shall be carried out under the close supervision of the Project Officer, MNREDA. The final inspection after installation and commissioning shall be carried out by Project Officer, MNREDA. MNREDA can also get the systems tested by any approved test centre/ laboratory. Rejected material (if any) will be replaced by the supplier at its cost within a stipulated time.

## **14. Training**

Bidder shall provide necessary training at District HQ/SDO Level for mutually agreed duration and number of persons to enable the purchaser to maintain the system free of cost.

## **15. Court of Competent Jurisdiction**

The Courts of Shillong only have jurisdiction in this case.

The following details should be marked indelibly on the body of Solar Panel Module.

- (a) Name of the Manufacturer/distinctive logo
- (b) Model or type number
- (c) Serial Number
- (d) Year of Manufacturer
- (e) Not for sale or transfer. Property of MNREDA.

## **SCOPE OF WORK & TECHNICAL SPECIFICATION**

### **1. Scope of Work**

The broad Scope of Work shall include the following:

- a) Design, manufacture, supply, packing and forwarding, transportation, transit insurance, installation & commissioning of Solar Street Lighting Systems
- b) Detailed planning of smooth execution of the project
- c) Performance testing of the complete system
- d) Warranty of the system for 5(five) years faultless operation.
- e) After sales service

This would inter-alia include

- a) A clear understanding of the features of the proposed project site. This may require a prior visit to the proposed site.
- b) Supply of the complete systems, including all necessary components, sub components, spares, and tools etc. as per technical specifications given elsewhere in this document.
- c) Erection and commissioning of the supplied systems at the specified site.
- d) Any other work urgently required as per site conditions.
- e) The bidder must also provide a detailed operation and maintenance manual specific to the installed systems.
- f) It shall be the responsibility of the successful bidder to provide fabrications for supply and installation of suitable support for the PV panels and other components, wherever required, with the accessories.
- g) Civil work for PV structure.
- h) Supply of manual for Operation and Maintenance of all the system in English or local language
- i) Regarding actual work to be carried out at the site, tenderer needs to execute the work in consultation with the office of MNREDA.

### **2. General Technical Description & Configuration**

#### **WHITE-LED (W-LED) BASED SOLAR STREET LIGHTING SYSTEM**

A standalone solar photovoltaic street lighting system (SLS) is an outdoor lighting unit used for illuminating a street or an open area. The Solar Street Lighting System consists of solar photovoltaic (SPV) module, a luminaire, storage battery, control electronics, inter-connecting wires/cables, module mounting pole including hardware and battery box. The luminaire is based on White Light Emitting Diode (W-LED), a solid state device which emits light when electric current passes through it. The luminaire is mounted on the pole at a suitable angle to maximize illumination on the ground. The PV module is placed at the top of the pole at an angle facing south so that it receives solar radiation throughout the day, without any shadow falling on it. A battery is placed in a box attached to the pole.

Electricity generated by the PV module charges the battery during the day time which powers the luminaire from dusk to dawn. The system lights at dusk and switches off at dawn automatically.

## **BROAD PERFORMANCE SPECIFICATIONS**

PV Module : 50 Wp under STC

Battery : Lead acid Tubular Flooded or Tubular GEL /VRLA ,  
12V- 40 AH @ C/10

Light Source : White Light Emitting Diode (W-LED) 9 Watt (Max.),  
W-LED luminaire, dispersed beam, soothing to eyes with the use of proper optics  
and diffuser

Light Output: Minimum 16 Lux when measured at the periphery of 4 meter  
diameter from a height of 4 meter.

The illumination should be uniform without dark bands or abrupt variations, and  
soothing to the eye. Higher light output will be preferred.

Mounting of light: Minimum 4 meter pole mounted

Electronic Efficiency: Minimum 85% total

Duty Cycle: Dusk to dawn

Autonomy: 3 days or Minimum 42 operating hours per permissible Discharge

## **TECHNICAL DETAILS**

### **PV MODULE**

- (i) Indigenously manufactured PV module should be used.
- (ii) The PV module should have crystalline silicon solar cells and must have a certificate of testing conforming to IEC 61215 Edition II / BIS 14286 from an NABL or IECQ accredited laboratory.
- (iii) The power output of the module(s) under STC should be a minimum of 50 Wp at a load voltage\* of  $16.4 \pm 0.2$  V.
- (iv) The open circuit voltage\* of the PV modules under STC should be at least 21.0 Volts.
- (v) The module efficiency should not be less than 12 %.
- (vi) The terminal box on the module should have a provision for opening it for replacing the cable, if required.

(vii) A distinctive serial number starting with NSM will be engraved on the frame of the module or screen printed on the tedlar sheet of the module. \*The load voltage and Voc conditions of the PV modules are not applicable for the system having MPPT based charge controller.

(viii) There should be a Name Plate fixed inside the module which will give:

- a. Name of the Manufacturer or Distinctive Logo. b. Model Number
- c. Serial Number
- d. Year of manufacture

### **BATTERY**

- i. Lead Acid, tubular positive plate flooded electrolyte or Gel / VRLA Type.
- ii. The battery will have a minimum rating of 12V, 40 Ah at C/10 discharge rate.
- iii. 75 % of the rated capacity of the battery should be between fully charged and load cut off conditions.
- iv. Battery should conform to the latest BIS/ International standards.

### **LIGHT SOURCE**

- i. The light source will be a white LED type.
- ii. The colour temperature of white LED used in the system should be in the range of 5500°K–6500°K.
- iii. W-LEDs should not emit ultraviolet light.
- iv. The light output from the white LED light source should be constant throughout the duty cycle.
- v. The lamps should be housed in an assembly suitable for outdoor use.
- vi. The temperature of heat sink should not increase more than 20°C above ambient temperature during the dusk to dawn operation.

### **ELECTRONICS**

- i. The total electronic efficiency should be at least 85%.
- ii. Electronics should operate at 12 V and should have temperature compensation for proper charging of the battery throughout the year.
- iii. No Load current consumption should be less than 20 mA.
- iv. The PV module itself should be used to sense the ambient light level for switching ON and OFF the lamp.
- v. The PCB containing the electronics should be capable of solder free installation and replacement. vi. Necessary lengths of wires/cables, switches suitable for DC use and fuses should be provided

### **ELECTRONIC PROTECTIONS**

- i. Adequate protection is to be incorporated under “No Load” conditions e.g. when the lamp is removed and the system is switched ON.



- ii. The system should have protection against battery overcharge and deep discharge conditions.
- iii. Fuse should be provided to protect against short circuit conditions.
- iv. Protection for reverse flow of current through the PV module(s) should be provided.
- v. Electronics should have temperature compensation for proper charging of the battery throughout the year.
- vi. Adequate protection should be provided against battery reverse polarity.
- vii. Load reconnect should be provided at 80% of the battery capacity status.

### **MECHANICAL COMPONENTS**

- i. A corrosion resistant metallic frame structure should be fixed on the pole to hold the SPV module.
- ii. The frame structure should have provision to adjust its angle of inclination to the horizontal, so that it can be installed at the specified tilt angle.
- iii. The pole should be made of Galvanised Iron (GI) pipe.
- iv. The height of the pole should be 4 metres above the ground level, after grouting and final installation.
- v. The pole should have the provision to hold the luminaire.
- vi. The lamp housing should be water proof and should be painted with a corrosion resistant paint.
- vii. A vented, acid proof and corrosion resistant metallic box with a locking arrangement for outdoor use should be provided for housing the battery.

### **INDICATORS**

The system should have two indicators, green and red.

The green indicator should indicate the charging under progress and should glow only when the charging is taking place. It should stop glowing when the battery is fully charged.

Red indicator should indicate the battery “Load Cut Off” condition.

### **QUALITY AND WARRANTY**

- i. The street lighting system (including the battery) will be warranted for a period of five years from the date of supply.
- ii. The PV module(s) will be warranted for a minimum period of 25 years from the date of supply. The PV modules must be warranted for their output peak watt capacity, which should not be less than 90% at the end of Ten (10) years and 80% at the end of Twenty five (25) years.
- iii. The Warranty Card to be supplied with the system must contain the details of the system.

## **OPERATION and MAINTENANCE MANUAL**

An Operation, Instruction and Maintenance Manual, in English and the local language, should be provided with the Solar Street Lighting System.

### **The following minimum details must be provided in the Manual:**

Basic principles of Photovoltaics.

A small write-up (with a block diagram) on Solar Street Lighting System - its components, PV module, battery, electronics and luminaire and expected performance.

Type, Model number, Voltage & capacity of the battery, used in the system.

The make, model number, country of origin and technical characteristics (including IESNA LM-80 report) of W-LEDs used in the lighting system.

About Charging and Significance of indicators.

Clear instructions about erection of pole and mounting of PV module (s) and lamp housing assembly on the pole.

Clear instructions on regular maintenance and trouble shooting of the Solar Street Lighting System.

DO's and DONT's.

Name and address of the contact person for repair and maintenance, in case of non-functionality of the solar street lighting system.

# **MEGHALAYA NON-CONVENTIONAL AND RURAL ENERGY DEVELOPMENT AGENCY**

Near B.S.F. Camp, Mawpat, P.O. Mawpat, Shillong – 793 012

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)

## **PART – B**

### **Financial Bid**

**PART-B FINANCIAL BID**

NIT No. MNREDA/ 1689/

Dated Shillong, the 8<sup>th</sup> August, 2016

Sl.	Items	Unit	Quantity	Rate(Rs.)	Amount (Rs.)
1.	Supply, Installation & Commissioning of LED based Solar Street Lighting Systems as per tender specification. FOR	Nos.	1		
2.	Local transportation per	Nos.	1		
3.	Installation and commissioning at different locations in the State of	Nos.	1		
4.	CMC for 3 years after the expiry of warranty period per system	Nos.	1		
	Total				

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

Note : 1. The prices quoted above are complete in all respect as per the Technical Specifications and inclusive of all Central/State/Local taxes and duties, packing, forwarding, transit, insurance, loading and unloading, transportation and other charges etc.

2. Certified that rates quoted are as per specifications, terms and conditions mentioned in the bid document.

3.All the materials shall be delivered within 90 (ninety) days from the date of issue of the work order.

**Date :**

**Signature of Tenderer with Company Seal**

## TECHNICAL DATA SHEET

(To be furnished by the Bidder)

Sl. No.	NAME OF THE COMPONENT	PROPOSED SPECIFICATION
<b>1.</b>	<b>LAMP</b>	
i)	Type	
ii)	Make	
iii)	Rating (wattage)	
iv)	Light output in lumens	
v)	Type of luminaries	
vi)	Color temperature	
vii)	Lamp housed in an assembly suitable for	
viii)	Heat sink temperature	
<b>2.</b>	<b>BATTERY</b>	
i)	Type	
ii)	Make	
iii)	Type of plate	
iv)	Reference standard	
v)	Minimum rating	
vi)	Discharge rated capacity	
<b>3.</b>	<b>SPV Module</b>	
i)	Make	
ii)	Model No.	
iii)	Power output	
iv)	No. of solar cells	
v)	Operating voltage	
vi)	Open circuit voltage	
vii)	Efficiency	
viii)	Name Plate fixed inside or outside	
ix)	Reference standard	
<b>4.</b>	<b>ELECTRONICS</b>	
i)	Make	
ii)	Operating voltage	
iii)	No load current	
iv)	Type of cable	
v)	Efficiency	
vi)	Short circuit protection type	
vii)	Protection for reverse flow	
viii)	Temperature compensation provided for	
ix)	Battery reverse polarity	
x)	Load reconnect battery capacity	
xi)	The idle current consumption	

Date:-

Signature of Bidder with seal

1	2	
5.	<b>Mechanical</b>	
i)	Structure type	
ii)	Tilt angle	
iii)	Height of pole	
iv)	Battery box type	

**Date:-**

**Signature of Bidder's Seal**