

# **Tender Document**

**for**

**Supply of around 50,000 Nos of Solar Lanterns to the P.O, ITDA's of West Godavari, East Godavari, Visakhapatnam, Vizianagaram and Srikakulam Districts for distribution to all S.T students Under Tribal Sub-Plan of 2018-19.**

**NAME OF THE SUPPLIER / MANUFACTURER: -----  
NREDCAP Registration No: \_\_\_\_\_ / 2018-19**

**Tender Notice No:**

**NREDCAP/SE/SPV LANTERNS/08/ST-Sub Plan/2018-19  
Dated: 26.09.2018**

**NEW AND RENEWABLE ENERGY DEVELOPMENT CORPORATION OF A. P. Ltd.  
(NREDCAP)**

**Regd Office: 12-464/5/1, River Oaks Apartments,  
CSR Kalyana Mandapam Road, Tadepalli,  
GUNTUR DISTRICT- 522 501  
TEL: 08645-797162 / 797163  
Website: [www.nredcap.in](http://www.nredcap.in)**

## **INDEX**

<b>1. Tender Notice .....</b>	<b>3</b>
<b>2. Scope of works.....</b>	<b>5</b>
<b>3. Pre Requisites for participation.....</b>	<b>7</b>
<b>4. General Conditions.....</b>	<b>9 to 11</b>
<b>5. Profile of Suppliers/Manufacturers.....</b>	<b>13</b>
<b>6. Technical Specifications of 2 watts (W-LED) Solar Lanterns at Annexure – A</b>	<b>15 to 21</b>
<b>7. Technical Bid at Annexure – B</b>	<b>23</b>
<b>8. Financial Bid at Annexure – C</b>	<b>25</b>
<b>9. Annexure - I</b>	<b>27</b>

## TENDER NOTICE

S.No	Particulars	Details
1	Tender Notice No	<b>NREDCAP/SE/SPV LANTERNS/08/ST-Sub Plan/2018-19, Dated: 26.09.2018</b>
2	Scope of the work	Supply of around 50,000 Nos of Solar Lanterns to the P.O, ITDA's of West Godavari, East Godavari, Visakhapatnam, Vizianagaram and Srikakulam Districts for distribution to all S.T students Under Tribal Sub-Plan of 2018-19.
3	Eligibility for participation	Registered / Renewed Suppliers & Manufacturers with NREDCAP for the year 2018-19 as <b>“SPV Solar System Integrators”</b>
4	Processing fee of Tender Document	Rs. 20,000/- + 3,600/- ( GST @ 18%) = Rs. 23,600/-
6	Amount of EMD	Rs. 1,00,000/- (Rupees One lakh only) by way of Demand Draft drawn in favour of NREDCAP, payable at Tadepalli, Guntur District.
7	Last Date & Time for Submission of sealed Tenders	10.10.2018 by 13:00 Hrs
8	Date & Time for Opening of Technical Bids	10.10.2018 by 15:00 Hrs

- NOTE:** 1. The Tender Document can be downloaded from <http://www.nredcap.in>, through open tender and the processing fee of tender document shall be enclosed by way of demand draft for Rs: 23,600/- drawn in favor of NREDCAP Ltd., payable at Tadepalli, Guntur District.
2. The Financial Bids shall be kept in a separate sealed cover and the Financial Bids of Technically qualified Bidders will only be opened.
3. The Valid NSIC certificate holders are exempted from payment of EMD amount only, which shall be enclosed to the tender document.

**Sd/-**  
**VC & Managing Director**  
**NREDCAP, Tadepalli**

## SCOPE & SPECIFICATIONS

### Scope of the work

Supply of around 50,000 Nos of Solar Lanterns to the P.O, ITDA's of West Godavari, East Godavari, Visakhapatnam, Vizianagaram and Srikakulam Districts for distribution to all S.T students with a concept of "one solar lantern for one Tribal student" under Tribal Sub-Plan of 2018-19. The exact quantity allotted to each Project Officer will indicate in the Purchase order. The details of Project officers of ITDA's are given in the enclosed Annexure -I.

### Definition

A 'Solar Lantern' is a portable lighting device consisting of a PV module, battery, lamp, A.C Charger and electronics. Battery, lamp, and electronics are placed in a suitable housing made of metal or plastic or fiber glass. The Solar Lantern is suitable for either indoor or outdoor lighting, covering a full range of 360 degrees.

The PV module converts sun light into electricity, charges the battery which powers the luminaire. Luminaire consists of White Light Emitting Diode (W-LED), a solid state device which emits light when an electric current passes through it.

### Specifications of Solar LANTERNS

PV Module	5.0 Wp under STC
Battery	<b>3X3.2V, 1450mAh Capacity Rechargeable Lithium-Ferro Phosphate (LiFePo4) or 3X3.7 V, 1300mAh Capacity Rechargeable Lithium ion (Li-ion)</b>
Light Source	2 Watt W-LED luminaire, dispersed beam, soothing to eyes with the use of proper optics and diffuser.
Light Output	The lamp should have two levels of light (operation at 100% power and 60% power) to take care of the different lighting needs, as per the user requirements.
Duty Cycle	6 hours a day (at full brightness level), under average daily insulation of 5.5 KWh/Sq.m on a horizontal surface.

The Solar Lanterns shall be supplied as per the Technical Specifications given in the enclosed Annexure-A.

**Signature of the Tenderer with seal**

**Pre-Requisites for submission of Tenders for Supply of 50,000 Nos of  
2 Watt W-LED Solar Lanterns**

Tenders are invited for Supply of around 50,000 Nos of Solar Lanterns to the P.O, ITDA's of West Godavari, East Godavari, Visakhapatnam, Vizianagaram and Srikakulam Districts for distribution with a concept of "**one solar lantern for one Tribal student**" Under Tribal Sub-Plan of 2018-19 from the **Registered / Renewed Suppliers & Manufacturers as "SPV Solar System Integrators"** with NREDCAP for the year 2018-19 for distribution to all ST students of Govt Tribal Ashram Schools.

**The Tenderers shall fulfill the following eligible criteria and submit the necessary documentary proofs along with Tender document.**

1. The Suppliers & Manufacturer's shall have valid Test Certificates for all Components of Solar Lantern from MNRE or MNRE authorized Test Centers as per Specifications enclosed at Annexure-A.
2. The Suppliers & Manufacturers shall have experience in supply of minimum 5000 No's of Solar Lanterns with NREDCAP during the last two years 2016-17 & 2017-18.
3. The Suppliers & Manufacturers annual turnover shall not be less than Rs: 3.00 Crores (Rupees Three Crores only) during last two years i.e., 2016-17 and 2017-18. Certificates issued by CA must be enclosed.
4. The Suppliers & Manufacturers have not been black listed at any time by NREDCAP as well as any of the Govt. Nodal Agencies in the country.
5. The Suppliers & Manufacturers who submits the tender without satisfying or deviating the above conditions will be rejected duly forfeiting the EMD amount.

**Signature of the Tenderer with seal**

**GENERAL CODITIONS OF THE TENDER DOCUMENT:**

1. The rates are inclusive of GST @5% as per GST Act. The rates quoted shall also be inclusive of transportation charges up to the Office of Project Officer, ITDA. The Financial bid is to be submitted in the enclosed format at **Annexure – C**
2. The Purchase Orders will be placed at different spells among 50,000 No's of Solar Lanterns for which tender floated. All the Solar Lanterns ordered are to be supplied to the respective Project Officers of ITDA's in the Districts within 45 days from the date of issue of Purchase order.
3. The filled in Tender document duly signed on each page has to be submitted along with **EMD amount of Rs. 1,00,000/-** (Rupees one Lakh only) by way of Demand Draft drawn in favour of "NREDCAP" Payable at Tadepalli. In case of unsuccessful bidder, the EMD amount will be refunded immediately after finalization of the Tender. The successful bidder shall provide the **Security Deposit** of **Rs.10.00 Lakhs** (Rupees Ten Lakhs only) either by DD in favor of NREDCAP or Bank Guarantee and will be released on successful completion of the supply of Solar Lanterns.
4. The Technical and Financial bids are to be submitted in separate sealed covers duly super scribing. These two covers shall be submitted in a separate sealed cover super scribing **"Tender for Supply of Solar Lanterns"**.
5. Good quality components shall be supplied. In case, if it is found that materials are not as per Specifications, such components are to be replaced at free of cost.
6. The complete Solar Lanterns including Battery should be under guarantee / warranty for a period of **Five years** from the date of supply. The successful bidder should establish service center in the respective PO, ITDA's of West Godavari, East Godavari, Visakhapatnam, Vizianagaram and Srikakulam Districts.
7. The bills are to be raised in favour of NREDCAP by suppliers / manufacturers with **GS TIN number as per GST Act in force w.e.f. 01.07.2017** and submit in triplicate after duly handing over the Solar Lanterns to the respective Project Officers of ITDA's in the Districts.

**Signature of the Tenderer with seal**

8. 90% Cost of the Solar Lanterns will be released on receipt of the certified bills from the concerned District Manager of NREDCAP along with the handing over certificate issued by the officials of ITDA concerned. The balance 10% Performance guarantee amount will be released against Bank guarantee (or) after completion of guarantee / warranty period of 5 (five) years from the date of supply.
9. The payments to the suppliers shall be made only after deduction of TDS under income Tax act against the invoices generated as per GST Act.
10. NREDCAP reserves the right to cancel the order partially or fully in case the material supplied are substandard / delay in progress of the works without any notice and forfeit the Security Deposit amount paid.
11. For the delayed supplies beyond the stipulated period, penalty @1% on the cost of the systems per week will be levied subject to the maximum of 5%. For valid reasons, if the supplier is not able to supply the systems within the time prescribed, the VC & Managing Director on receipt of representation from the supplier prior to due date, may grant extension of time. If the work is not completed within one month beyond scheduled date, the entire work will be cancelled and the Security Deposit paid will be forfeited.
12. The VC & Managing Director may relax any of the conditions for valid reasons and the decision of VC & Managing Director is final and binding.
13. **The Suppliers & Manufacturers mandatorily shall submit two numbers of working models of Solar Lanterns as per specifications given in the Tender along with the Tender Document.**
14. In case of any dispute, the decision of VC & Managing Director, NREDCAP Ltd., Tadepalli shall be final and binding. All the legal disputes relating to the contract shall be subject to the jurisdiction of the judicial courts at Hyderabad. The NREDCAP reserves the right to accept or reject any or all offers fully or partly without assigning any reasons.

**Signature of the Tenderer with seal**

**PROFILE OF SUPPLIERS / MANUFACTURERS**

<b>S.No</b>	<b>Particulars</b>	<b>Details</b>	
1	Name of the Tenderer		
2	Postal Address		
3	Email address for communication		
4	Telephone, Fax No:		
5	Name, designation & Contact number of the representative of the Tenderer.		
6	Nature of the firm (Individual Partnership/Pvt. Ltd/ Public Ltd., Co. /Public Sector etc.,)		
7	Amount paid towards Tender processing fee with details		
8	Amount paid towards Earnest money deposited with details		
9	Annual Turnover for last Two financial years 2016-17 & 2017-18 (Attach Certificate from registered Chartered Accountant)	2016-17 (Rs)	2017-18 (Rs)
10	PAN Number, GS TIN Number along with Registration details (evidences are to be attached)		
11	Details of Test Certificate(s) issued by MNRE/MNRE authorized test centers. a. Name of the Test Center b. Valid Test Certificate for the following components i) SPV Module ii) Battery iii) Luminaire		

**Signature of the Tenderer with seal**



**A). Technical Specification of 2 Watts W-LED Solar Lanterns**

Beneficiary Organization	Supply of around 50,000 nos of 2 Watt W-LED Solar Lanterns to the P.O, ITDA's of West Godavari, East Godavari, Visakhapatnam, Vizianagaram and Srikakulam Districts for distribution to all S.T students Under Tribal Sub-Plan of 2018-19.
Hours of Operation	Minimum of 6 operating hours per permissible discharge
<b>SPV Modules</b>	
SPV modules Capacity	5.00 Wp under STC
Type of Modules	Crystalline silicon - IEC/MNRE approved
<b>Battery</b>	
Battery Type	Rechargeable Lithium-Ferro Phosphate (LiFePO4) (or) Rechargeable Lithium ion (Li-ion)
Battery voltage	3X3.2V (LiFePO4) <b>or</b> 3X3.7V (Li-ion)
Battery capacity	1450 mAh (LiFePO4) <b>or</b> 1300mAh (Li-ion) <b>or</b> Requisite Capacity
<b>Light Source</b>	
Capacity	2 Watt W-LED luminaire, dispersed beam, soothing to eyes with the use of proper optics and diffuser.
Out put	The lamp should have two levels of light (Operation at 100% power and 60% power) to take care-of the different lighting needs, as per the user requirements.
<b>Other Accessories</b>	
AC Charger	Suitable AC charger
Cables	20 feet length

**B) COMPONENT WISE MNRE TECHNICAL DETAILS****PV MODULE:**

- (i) Indigenously manufactured PV modules should be used in the Solar Lanterns.
- (ii) The PV module should have crystalline silicon solar cells, and should have humidity, freeze, thermal cycling and damp heat tests certificate conforming to IEC 61215 Edition II / BIS 14286 from an NABL or IECQ accredited Laboratory.

Signature of the Tenderer with seal

- (iii) The PV module must have a minimum of 5.0 Wp at an appropriate voltage for charging of battery used, under the standard test conditions (STC) of measurement.
  - (iv) The module efficiency should not be less than 10%
  - (v) The terminal box on the module should have a provision of opening it for replacing the cable, if required.
  - (vi) There should preferably be an arrangement (stand) for mounting the module at an optimum angle in the direction facing the sun.
  - (vii) A foil/ strip containing the following details should be fixed inside on the module so as to be clearly visible from the front side:-
    - a) Name of the Manufacturer and/ or distinctive Logo
    - b) Model and/ or Type No.
    - c) Serial No.
    - d) Year of manufacture
  - (viii) 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 conditions of the PV module are not applicable for the system having MPPT

**BATTERY:**

- i. Rechargeable Lithium-Ferro Phosphate (LiFePO<sub>4</sub>) or Rechargeable Lithium ion (Li-ion)
- ii. Capacity: 3X3.2V, 1450 mAh (LiFePO<sub>4</sub>) or 3X3.7 V, 1300 mAh (Li-ion)
- iii. Number of charge-discharge cycles: >2000
- iv. Permissible Depth of Discharge (D o D): Up to 85%
- v. Battery should conform to the latest BIS/ International standards.

**LIGHT SOURCE:**

- 1. The light source should be of 2 Watts capacity White Light Emitting Diode (W-LED) type.
- 2. The colour temperature of W-LED(s) used in the system should be in the range of 5500°K – 6500°K.
- 3. W-LED(s) should not emit ultraviolet light.
- 4. The light output from the W - LED should be constant throughout the duty cycle.
- 5. The housing should be suitable for indoor as well as outdoor use.

**Signature of the Tenderer with seal**

### **ELECTRONICS:**

- i. Charging should be with 'MPPT' type micro controller based charger.
- ii. Efficiency of the electronic system should be at least 85%.
- iii. Electronics should have temperature compensation for proper charging of the battery throughout the year.
- iv. The idle current should be less than 1 mA
- 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 other protections should be provided.

### **ELECTRONIC PROTECTIONS:**

- I. Adequate protection is to be incorporated for "No Load" condition, e.g. when the lamp is removed and the Solar Lanterns is switched ON.
- II. The system should have protection against battery overcharge and deep discharge conditions.
- III. The load reconnect should be provided at around 80% of the battery capacity status.
- IV. Adequate protection should be provided against battery reverse polarity.
- V. A fuse should be provided to protect against short circuit conditions.
- VI. Protection for reverse flow of current through the PV module should be provided.
- VII. During the charging, lamp cannot be switched "ON".

### **INDICATORS:**

- i. The system should have two indicators, green and red.
- ii. 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.
- iii. Red indicator should indicate the battery "Load Cut Off" condition.

### **QUALITY AND WARRANTY:**

- I. The complete Solar Lantern with W-LED will be warranted for five years.
- II. The battery must be warranted for a minimum period of 5 years.
- III. The Warrantee/ Guarantee Card to be supplied with the Solar Lantern must contain the details of the system supplied.

**Signature of the Tenderer with seal**

## **OPERATION AND MAINTENANCE MANUAL:**

An Operation, Instruction and Maintenance Manual, in English and the local language, should be provided with the Solar Lantern. The following minimum details must be provided in the Manual:

- Basic principles of Photovoltaic's.
- A small write-up (with a block diagram) on Solar Lanterns - its components, PV module, battery, electronics and luminaire and expected performance.
- Significance of indicators.
- 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.
- Clear instructions on mounting, operation, regular maintenance and trouble shooting of the Solar Lanterns.
- Instructions on replacement of battery.
- DO's and DONT's.
- Name and Address of the contact person for repair and maintenance during the warranty.

**Signature of the Tenderer with seal**

**Technical bid for 2 Watts W-LED Solar Lanterns**

Beneficiary Organization	Supply of around 50,000 Nos of 2 Watt W-LED Solar Lanterns to the P.O, ITDA's of West Godavari, East Godavari, Visakhapatnam, Vizianagaram and Srikakulam Districts for distribution to all S.T students Under Tribal Sub-Plan of 2018-19.
Hours of Operation	
<b>SPV Modules</b>	
SPV modules Capacity	
Type of Modules	
<b>Battery</b>	
Battery Type	
Battery voltage	
Battery capacity	
<b>Light Source</b>	
Capacity	
Out put	
<b>Other Accessories</b>	
AC Charger	
Cables	

**Signature of the Tenderer with seal**

**Financial bid for 2 Watts W-LED Solar Lanterns**

<b>S.No.</b>	<b>Name of the Item</b>	<b>Rate (Rs) (In words)</b>
1	Supply of 2 watts W-LED based Solar Lanterns comprising of 5.00 Wp SPV module, 3X3.2V, 1450 mAh LiFePo4 battery (or) 3X3.7V,1300 mAh Li-ion, Electronics along with the other Technical Items as per MNRE Specifications with 20 feet cable including suitable AC charger with Transportation charges on FOR destination basis.	
2	Add GST on item - 1	
3	<b>Total (Item - 1 + Item - 2)</b>	

**NOTE:** The Financial Bids shall be kept in a separate sealed cover and the Financial Bids of Technically qualified Bidders will only be opened.

**Signature of the Tenderer with seal**

**District wise Project Officers, ITDA**

<b>S.No</b>	<b>Name of the District</b>	<b>Address of the Project Officer, ITDA</b>
1	Visakhapatnam	The Project Officer, ITDA Paderu, M: 09490957002
2	Vizianagaram	The Project Officer, ITDA Parvathipuram, M: 09491309822
3	Srikakulam	The Project Officer, ITDA Seethampeta, M: 08941258331
4	East Godavari	The Project Officer, ITDA Chintoor, M: 09490957000
5	West Godavari	The Project Officer, ITDA Rampachodavaram, M: 09490957004

**Signature of the Tenderer with seal**