

# ASSAM SCIENCE TECHNOLOGY AND ENVIRONMENT COUNCIL

(Under Science & Technology Department, Govt.of Assam )

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## NOTICE INVITING TENDER

Sealed tenders accompanied by Crossed Indian Postal Order of Rs.20.00 (Rupees Twenty only) ( Non refundable) in favour of Director, ASTEC payable at Guwahati are hereby invited from manufacturers or their authorized dealers for supply of Solar Lantern , Model-IIA as per specification of MNRE, GOI. Tender document may be obtained from the undersigned during working hours from 5<sup>th</sup> January to 21<sup>th</sup> January 2011 on payment of a Demand Draft of Rs.5000.00 in favour of Director, ASTEC and payable at Guwahati. The tender can also be downloaded from the website [www.astec.gov.in](http://www.astec.gov.in). The tender cost in that case will have to be deposited by DD favouring Director, ASTE Council payable at Guwahati in a separate envelope along with tender super scribing “**Tender Cost for Solar Lantern**”.

Tenders will be received upto 12 noon of 24<sup>th</sup> January 2011 and both technical and financial bid will be opened on 24<sup>th</sup> January 2011 at 1:00 p.m., the same day. The description of the item to be supplied as follows:

Sl. No	Item	Quantity
1.	Supply of Solar Lantern- Model-IIA as per specification of MNRE(Annexure-II), GOI( (SPV Module-12V, 10Wp Lamp- 7w CFL Battery- 12v, 7Ah, sealed maintenance free)	6000 Nos. (approximately)

## TERMS AND CONDITIONS:

- i) The sealed envelope containing both the quotations should be superscribed with “**Tender for Solar Lantern, Model-IIA due date 24-01-11**”. Sealed tender/envelope for “techno commercial” bid and “financial bid” should be submitted separately.
- ii) The quoted rate for Solar Lantern should be F.O.R. ( A) Guwahati and (B) District head quarter other than Guwahati . The rate should also be inclusive of all applicable taxes ( i.e., Assam VAT, CST etc.), packing, dispatching, insurance and delivery etc.
- iii) The supplier should provide a warranty for a minimum period of two years for the complete system (including the battery) and minimum ten years for the PV module from the date of supply.  
Cont.....
- iv) The tenderer has to quote their rates for the system as per Format – I which has been enclosed with the tender document. No separate sheet should be used to quote rates other than this format.

- v) The tender should be submitted in two parts bids, viz- Techno-commercial Bid and Financial Bid. Each bid should be sealed in separate envelope clearly mentioning as “**Techno -Commercial Bid**” and “**Financial Bid**”. Both the envelopes shall then be inserted in a bigger envelope duly super scribed with “**Tender for Solar Lantern, Model-IIA**”, due date 24-01-11. tenders of parties not following this criteria will be disqualified.
- vi) Suppliers must have their authorized agents with service facilities distributed throughout the state to cover all 27 districts of Assam. These service centres will provide immediate service support required for maintenance of the solar lantern. (Contact address of service centres/local dealer which will provide service district wise has to be furnished for claiming any payment)
- vii) The undersigned reserves the right to accept or reject any or all tenders in part or full without assigning any reason thereof. The undersigned also reserves the right not to accept the lowest rate quoted by the tenderer if necessary.
- viii) Rate quoted should be valid for at least six months from the date of opening the tender.
- IX) Rate quoted should be inclusive of all applicable taxes and duties as per rule prevailing in the state of Assam. Taxes will be deducted at source against which necessary tax deduction certificate will be provided as and when required.
- X) The techno-commercial bid should comprise of
  - i) A report on testing and manufacturing facilities available along with pictures and an undertaking that if the details provided by the manufacturer are in deviation with provision of the scheme they may be disqualified,
  - ii) Technical specification of each item mentioning the name of manufacturers,
  - iii) Attested copy of valid test certificates for all components issued by SEC/other MNES approved organization not prior to 1<sup>st</sup> March 2006
  - iv) Terms of supply,
  - v) Details of local authorized agent/office with service facilities and
  - vi) IPO.
  - vii) TAN, PAN, service Tax registration number
- XI) If the Technical Bid does not comprises all the above documents and is not found satisfactory the financial Bid of that particular bidder will not be opened.
- XII) The Director, ASTEC has all right to place order either on part or in full.
- XIII) Any dispute, if arises, will be under the jurisdiction of any court of Guwahati only.

## **2. SUPPLY OF MATERIALS**

Materials are to be delivered within 45 days of placing firm order and clearance of required quantity along with location/district where materials are to be delivered. The materials will be required to be delivered at Guwahati as well as other district head quarters.

## **3. SECURITY DEPOSIT**

In case an offer is made to any party they will have to deposit a security amount of 10% of the ordered value within 7 days from the date of issue of the supply order at the time of signing of agreement. However, manufacturers registered, as SSI unit or having valid valid NSIC registration need not deposit the security money but sign the agreement only. The security deposit will be released immediately after supply of all the materials as per order and accepted by ASTEC. If no material is supplied within the stipulated time as per order, ASTEC will have every right to forfeit the security deposit and thereby cancel the order.. The security deposit may be submitted in the form of Demand Draft in favour of the Director, ASTEC and payable at Guwahati.

#### **4. WARRANTY & ANNUAL MAINTENANC CONTRACT**

The manufacturer must provide a warranty for minimum period of two years for all systems (including the battery) and minimum ten years for the PV module from the date of supply. Format of warranty cards, to be supplied with each system has been given in Annexure-I.

#### **5. PAYMENT AND OTHER FINANCIAL TERMS**

- i) 70% payment shall be made on receipt of materials in full & in good working condition.
- ii) Balance 30% payment shall be released after three months against 10% amount as security deposit of total system cost as Demand Draft in favor of the Director, ASTEC for one year from the date of release of 2<sup>nd</sup> installment.

#### **6. TEST CERTIFICATE FOR SOLAR LANTERN**

Manufacturers are required to submit test certificates for Solar Lantern from SEC or one of the authorised testing laboratory of MNRE, GOI. The existing test certificates for solar lantern, Model IIA, issued after 1<sup>st</sup> March, 2006 will be eligible subject to meeting other conditions specially the eligibility criterion for the manufacturers.

#### **7. TAXES AND DUTIES**

- i) Rates are to be quoted in Indian Rupees inclusive of all applicable taxes (i.e., 5 % Assam VAT, CST etc.), packing, dispatching, insurance , delivery. duties and FOR Guwahati as well as other district headquarter except Guwahati.. The following applicable taxes will be deducted at source against which necessary tax certificates will be provided as and when necessary.
- ii) Applicable 5 % Assam Value Added Tax (VAT) will be deducted at source.
- iii) "D" Form will issued as and when required.

8. PAN / TAN, Service Tax Registration No, Assam TIN / GRN No. are to be mentioned along with authenticated evidences, failure to which the tender will be rejected without any notice thereof.
9. Necessary exemptions will be allowed in case of SSI Units registered in Assam or NSIC Registered units.

(Satyendra Kumar Choudhury)  
Director, ASTEC

Copy to:

- 1) The Commissioner, Science & Technology Deptt., Govt. of Assam
- 2) Dy. FAO, ASTEC
- 3) ASTEC Notice Board
- 4) AEDA Notice Board
- 5) ASTEC Website
- 6) One National Daily : TOI / ET
- 7) One Local Daily: AT

(Satyendra Kumar Choudhury)  
Director, ASTEC

**FORMAT-I**

Rate for supply of Solar Lantern FOR Guwahati

<b>Sl. No.</b>	<b>Particulars</b>	<b>Rate for supply in Rs. (F.O.R. Guwahati)</b>

Rate for supply of Solar Lantern FOR District Head Quarters other than Guwahati.

<b>Sl. No.</b>	<b>Particulars</b>	<b>Rate for supply in Rs. (F.O.R. District Head Quarter)</b>

**ANNEXURE I**

**Warranty Card To Be Supplied With Each Solar Lantern**

- 1. Name & Address of the Manufacturer/ Supplier of the Solar Lantern -----
- 2. Name & Address of the Purchasing Agency -----
- 3. Date of supply of the solar lantern -----
- 4. Details of PV Module(s) supplied in the solar lantern -----
  - Make (Name of the manufacturer) -----
  - Model -----
  - Serial No(s) -----
  - Wattage of the PV Module(s) under STC -----
  - Warranty valid up to -----
- 5. Details of Battery -----
  - Make (Name of the manufacturer) -----
  - Model -----
  - Batch / Serial No(s) -----
  - Rated V & AH capacity at C/20 or C/10 rate at 20 C -----
  - Warranty valid up to -----
- 6. Details of Electronics & other BOS items -----
  - Make (Name of the manufacturer) -----
  - Model -----
  - Serial No (s). -----
  - Warranty valid up to -----
- 7. Designation & Address of the person to be -----
  - \* contacted for claiming warranty obligations -----
  -

( Signature)  
Name & Designation  
Name & Address of the Manufacturer/ Supplier  
(SEAL)

Place & Date :

(During the warranty period, MNRE / State Agencies/ users reserve the right to cross check the performance of the system with the minimum performance level specified in the MNES specifications ).

**SPECIFICATIONS FOR SOLAR LANTERN**  
**(2006-2007 SOLAR LANTERN PROGRAMME)****SOLAR LANTERN****I. DEFINITION**

A solar photovoltaic lantern (Solar lantern) is a lighting system consisting of a lamp, battery and electronics, all placed in a suitable housing, made of metal, plastic or fibre glass, and a PV module. The battery is charged by electricity generated through the PV module. The lantern is basically a portable lighting device suitable for either indoor or outdoor lighting, covering a full range of 360 degrees. A lighting device which provides only unidirectional lighting will not be classified as a solar lantern in the present context.

**II. DUTY CYCLE**

The solar lantern should provide a minimum of three hours of lighting per day under average daily solar radiation conditions of 5 kWh / sq.m. on a horizontal surface. The actual duration of lighting may vary depending on the location and season, etc.

**III. MODELS**

Only one model of solar lanterns that is Model IIA, will be eligible. The technical features and the performance requirement for Model IIA are given below:

**IV. LAMP**

- (i) The lamp will be of compact fluorescent (CFL) type with a rating of 7 Watt.
- (ii) For 4 - Pin type CFLs, a suitable pre-heating circuit must be provided.
- (iii) The lamp should preferably be mounted in a base up configuration.
- (iv) The light output should be 370 +/- 5% lumen for a 7W lamp.
- (v) No blackening or reduction in the lumen output by more than 10% should be observed after 1000 ON/OFF cycles (two minutes ON and four minutes OFF is one cycle)

**V. BATTERY**

- (i) The battery will be sealed maintenance free lead acid type.
- (ii) The capacity of the battery will be a minimum of 7.0 AH at 12 V at C/20 discharge rate at 27 oC.
- (iii) 80% of the rated battery capacity ( ~ 5.6 AH at 12V, 27 oC) should be between the low voltage and high voltage cut-off points specified in the performance requirements of the electronics used in the solar lantern.

**VI. ELECTRONICS**

- (i) The inverter will be of quasi sine wave/sine wave type with a crest factor less than 1.7 and the frequency in the range of 20-35 KHz. Half-wave operation is not allowed.
- (ii) The overall efficiency of the control electronics should be more than 80%.
- (iii) The idle current (i.e. the current consumed when the lamp is switched OFF and no charging is in progress) should not be more than 1mA.
- (iv) The voltage drop from module terminals to the battery terminals should not exceed 0.5 volts including the drop across the diode and the cable.
- (v) The PCB containing the electronics should be capable of solder free installation and placement.
- (vi) The low voltage cut off set point will not be lower than 11 V and the high voltage cut off should be below 14.3 V at 27 oC.

- (vii) The electronics circuit will be designed to ensure full charging of the battery under different ambient temperatures ( 0 - 45 oC). Further, the electronic circuit should have adequate temperature compensation for proper charging of the battery through out the year.

## VII. PV MODULE

- Wp
- (i) The SPV module to be used with the solar lantern must have a minimum of 10 (atleast 610 mA Iload when measured at 16.40+ 0.2 Volts load condition) under the standard test conditions (STC) of measurement.
  - (ii) The module should preferably have an arrangement (stand) for mounting at the optimum angle in the direction facing the sun.
  - (iii) In case of thin film solar cell modules, the specified values refer to the stabilized power output after the initial degradation.
  - (iv) The terminal box on the module should have a provision of opening it for replacing the cable, if required.
  - (v) A strip containing the following details should be laminated inside the module so as to be clearly visible from the front side:-
    - a) Name of the Manufacturer or distinctive Logo
    - b) Model and / or Type No.
    - c) Serial No.
    - d) Year of manufacture
  - (vi) In case of imported modules the details specified in (v) above should preferably be inside the module, if not provided, such details should be mentioned on the back side/frame of the module in permanent manner.

## VIII. ELECTRONIC PROTECTIONS

- (i) Adequate protection is to be incorporated under no load conditions (e.g. when the lamp is removed and the lantern is switched ON).
- (ii) Battery cut offs & reconnects should be provided to protect it against overcharge and deep discharge conditions.
- (iii) A fuse should be provided to protect against short circuit conditions.
- (iv) 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.
- (v) Full protection against open circuit, accidental short circuit and reverse polarity should be provided.

## IX. OTHER FEATURES

- (i) Two LED indicators one for a green light to indicate charging in progress and another red LED to indicate deep discharge condition 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.
- (ii) 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 of suitable of at least 5 meters length should be provided for inter-connection between the module and the lantern.
- (iii) The following details should be marked indelibly on the lantern :
  - (a) Name of the Manufacturer or Distinctive Logo.
  - (b) Model Number (this refers to Models indicated in Clause III above)



- (c) Serial Number.
- (d) Make and Serial Number of the Module used with the lantern
- e) Under Chief Minister's..... Programme
- (iv) An Operation, Instruction and Maintenance Manual, in English and Assamese language, should be provided with the solar lantern.

The following minimum details must be provided in the Manual:

- (a) About Photovoltaics
- (b) About solar lantern
- (c) About PV module.
- (d) About CFL.
- (e) About battery.
- (f) Clear instructions about mounting of PV module.
- (g) About electronics.
- (h) About charging and significance of indicators.
- (i) DO's and DONT's,
- (j) Clear instructions on regular maintenance and trouble shooting of the lantern.
- (k) Name and address of the person or service Centre to be contacted in case of failure or complaint.
- (v) Components and parts used in the solar lantern should conform to the latest BIS specifications, wherever such specifications are available and applicable.
- (vi) Additional features such as a small white LED which functions as a night lamp or a socket for mobile charger preferred. These is however optional. If such features are provided, they should not interfere with the independent switching on and off of the lantern.
- (vii) The PV module will be warranted for a minimum period of 10 years from the date of supply and the lantern (including the battery) will be warranted for a minimum period of two years from the date of supply. The Warranty Card to be supplied with the system must contain the details of the system supplied, as given below. The manufacturers can also provide additional information about the system and conditions of warranty as necessary.