

# 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\_shg @ bsnl.in ## Website www.mnreda.Gov.in

## TENDER DOCUMENT

1. WORK NO. MNREDA/1320/09/Sr.PO/165
2. NAME OF WORK : Electrification of 66 Nos. of Remote Villages in Meghalaya through SPV Domestic Home Lighting System with Integration of SPV Street Lighting System.
3. DATE OF ISSUE OF TENDER : 30<sup>th</sup> June, 2010 to 16<sup>th</sup> July, 2010.  
PAPER
- . DATE OF SUBMISSION OF TENDER : The 21<sup>st</sup> July, 2010 at 12:00 Hours
4. DATE OF OPENING OF TENDER : The 21<sup>st</sup> July, 2010 at 13:00 Hours  
FOR TECHNICAL BID.
5. TENDER ISSUE TO : \_\_\_\_\_  
\_\_\_\_\_ against application vide letter NO. \_\_\_\_\_  
\_\_\_\_\_ dated. \_\_\_\_\_ against payment of Rs.  
2,000/- (Rupees Two thousand) only vide Demand Draft/Bankers Cheque No./Cash \_\_\_\_\_  
\_\_\_\_\_ dated \_\_\_\_\_ of Bank towards cost of Tender  
Document (Non-refundable).

### PART – A

GENERAL TERMS AND CONDITIONS AND SCOPE OF WORK WITH TECHNICAL SPECIFICATION:  
(Page No. 1 – 43)

### PART – B BIDDING SCHEDULED (Page No. 44 - 46)

Issued By : \_\_\_\_\_  
FOR MEMBER SECRETARY CUM DIRECTOR,  
MEGHALAYA NON CONVENTIONAL AND  
RURAL ENERGY DEVELOPMENT AGENCY,  
SHILLONG.

## PART – A & B

Sl. No.	Items	Page No.
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## **NOTICE INVITING TENDER**

NO. MNREDA/1320/09/Sr.P.O/160 : Sealed Tenders with 120 (One hundred twenty) days validity are invited from any Authorized and approved MNES Manufacturer/Supplier for the below mentioned work:

1. Name of Work : Electrification of 66 Nos. of remote Villages in Meghalaya through SPV Domestic Home Lighting System.
2. Time of Completion : 180 (One hundred eighty) days.
3. Cost of tender : Rs. 2,000/- (Rupees Two thousand) only.
4. Date of Issue of Tender : 30.06.2010 TO 16.07.2010
5. Last date of Submission : 21.07.2010 UPTO 12:00 Hours
6. Date of Opening of Technical Commercial : 21.07.2010 at 13:00 Hours
7. **INSTRUCTION :**
  - i). Cost of Tender paper or document should be in the form of Banker's Cheque/Demand Draft (Non-refundable) drawn in favour of Member Secretary-Cum Director, Meghalaya Non-Conventional and Rural Energy Development Agency, Shillong.
  - ii). While requesting for issuing tender paper/document and application form in plain paper must be stated clearly work NO.
  - iii). Tender paper/document will be issued by Courier/Speed post on request but extra payment of Rs. 200/- (Rupees Two hundred) only should be made by Demand Draft in favour of the undersigned towards cost of Speed Post/Courier.

- iv). Local Dealer of any Firm/Manufacturer/Supplier will be issued Tender Paper but on furnish of their Dealership Certificate and tender Paper issued will be in their principle's name.
- v). In the event of postal delayed, the undersigned shall not be held responsible.
- vi). Tender paper/document shall be issued on any working day within the specified date.
- vii) Earnest Money deposit of either 1% or 2% as the case may should be accompany the offer.
- viii). Tender are to see themselves that for each Work No. nature of work are qualified or not the issuing of Tender paper by the office to those non qualified firm/Supplier/Manufacturer are not the responsibility of this office.
- ix). In case the opening date is declared as holiday, tender shall be opened in the next working day at the same time and hour Website.
- x) Tenders can also submitted Tender downloading from our website but cost of Tender Document has to be furnished before casting of Tender.

The undersigned reserves the right not to accept the lowest tenderer and may reject any or all the tenderers without assigning any reasons whatsoever.

Sd/-  
Member Secretary-Cum Director,  
Meghalaya Non-Conventional and  
Rural Energy Development Agency,  
Shillong.

Memo NO. MNREDA/1320/09/Sr.PO/  
Copy to:

Dated Shillong, the

1. The Principal Secretary to the Govt. of Meghalaya,  
Power Department.
2. Shri Sudhir Mohan,  
Adviser (RVE) Division  
Ministry of New and Renewable Energy,  
Block No. 14, C.G.O. Complex,  
Lodi Road, New Delhi-110003.
3. M/s Impact INC,  
Glorys Plaza, 2<sup>nd</sup> Floor,  
Police Bazar, Shillong.

4. The Directorate of  
Information & Public  
Relation Department  
Meghalaya, Shillong.
5. The State Public Information Officer,  
National Information Centre,  
Meghalaya Shillong.
6. All Registered & Recognised,  
MNRE Manufacturer &  
Supplier.
7. Notice Board.

Sd/-  
Member Secretary Cum Director,  
Meghalaya Non Conventional and  
Rural Energy Development Agency,  
Shillong.

## 2. SPECIAL CONDITIONS OF CONTRACT:

### 2.1 Details of Villages, Location and Systems requirements:

Sl. No.	Name of village	Block	District	Systems requirements	
				Solar Home Lighting System	SPV Street Lighting System
1	2	3	4	5	6
1.	Eman Durabanda	Chokpot	South GaroHills	68	7
2.	Pope Songmong	-do-	-do-	36	3
3.	Amonggiri	Rongara	-do-	14	2
4.	Mebokdam	Resubelpara	East garo Hills	35	3
5.	Waksoradang	-do-	-do-	7	1
6.	Chibrajambal	Dambo Rongjeng	-do-	35	4
7.	Rongbang	-do-	-do-	8	1
8.	Dalbot Bangbol	Songsak	-do-	8	1
9.	Chambe Apal	-do-	-do-	5	1
10.	Mendalang Akusi	-do-	-do-	3	Nil
11.	Dambegre	Samanda`	-do-	2	Nil
12.	Pilgonggre	-do-	-do-	7	1
13.	New Chedikgre	-do-	-do-	5	Nil
14.	Lum Pyrdong	Umling	Ri-Bhoi	47	4
15.	Rajabala-A	-do-	-do-	2	Nil
16.	Rongbata	-do-	-do-	23	3
17.	Mawdieng-ngan	-do-	-do-	27	3
18.	Mawsla-dieng	-do-	-do-	20	2
19.	Umlang Phlang	-do-	-do-	29	3
20.	Umjapung	-do-	-do-	22	3
21.	Wahrong	Amlarem	Jaintia Hills	3	Nil
22.	Myntang Tiewieh	Lskien	-do-	5	Nil
23.	Khyndew Waso	Thadlaskien	-do-	3	Nil
24.	Umrukia	-do-	-do-	10	1
25.	Klang	Mawkynrew	East Khasi Hills	2	1
26.	Marten	Mawphlang	-do-	7	1
27.	Mawmih-niang	-do-	-do-	5	1
28.	Dewkber	Mawsynram	-do-	5	1
29.	Sohktieh	-do-	-do-	27	3
30.	Mawlyng-khoi	Pynursla	-do-	3	1
31.	Ri Sawkur	-do-	-do-	5	1
32.	Dewsaw	Shella Bholaganj	-do-	5	1
33.	Jalba	-do-	-do-	2	Nil
34.	Khohhiar	-do-	-do-	2	Nil
35.	Mawbah-wein	-do-	-do-	19	2

36.	Nonglyng-kein	-do-	-do-	7	1
37.	Pdang	-do-	-do-	10	1
38.	Ur-U-Wan	-do-	-do-	1	Nil
39.	Wahjain	-do-	-do-	4	1
40.	Wahsohkchain	Mawshynrut	West Khasi Hills	5	1

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41.	Dariphang	-do-	West Khasi Hills	23	3
42.	Domtiehsaw	-do-	-do-	8	1
43.	Langmar	-do-	-do-	14	2
44.	Matchok Khamram	-do-	-do-	17	2
45.	Madan Jira	-do-	-do-	13	2
46.	Mawbon Riangnga	-do-	-do-	8	1
47.	Niangbyrkong	Mawshynrut	West Khasi hills	5	Nil
48.	Nirang	-do-	-do-	15	2
49.	Nongmawkhar	-do-	-do-	6	Nil
50.	Noapara	-do-	-do-	55	3
51.	Nongkrong	-do-	-do-	32	3
52.	Shongbiang	-do-	-do-	38	3
53.	Sokyntait	-do-	-do-	12	1
54.	Swangre Nongrim	Mawshynrut	West Khasi Hills	8	1
55.	Swangre Waso	-do-	-do-	28	2
56.	Swangre Adeng	-do-	-do-	17	2
57.	Umla	-do-	-do-	5	Nil
58.	Waitwiang	-do-	-do-	6	Nil
59.	Warekro	-do-	-do-	10	1
60.	Mawlangkei	Nongstoin	-do-	10	1
61.	Umthli	-do-	-do-	27	3
62.	Amarsang	-do-	-do-	19	2
63.	Umyngkut	-do-	-do-	10	1
64.	Weikut	-do-	-do-	17	2
65.	Nongkrong	Mawshynrut	-do-	37	3
66.	Riangmaw	-do-	-do-	42	3
	<b>Total:</b>	-	-	<b>1015</b>	<b>103</b>

2.1.1 The Villages as indicated above at 2.1 may be liable to be changed but the No. of SPV-Home Lighting System and SPV Street Lighting System is fixed and intimation in this respect will be intimated prior to dispatching of equipments from factory.

## 2.2 TENDER PROCESS:

2.2.1 Tenderer are to furnish their offer in two seal cover envelope. 1<sup>st</sup> Envelope marked as“COMMERCIAL AND TECHNICAL BID” should enclosed alongwith. Part – A of Tender issued in original. And 2<sup>nd</sup> envelope marked as “FINANCIAL BID” should contain Part – B of Tender issued in original.

- 2.2.2 “**Technical Bid**” should contain only design of plant offer as per Technical Specification or requirement of Sec. 4 and related paper to Technical support. The Test Report domestic Home Lighting System and SPV Street Lighting System issued by any MNRE Authorization Test Centre issue after April, 2005 should be enclosed and attested by Authorized persons, VAT Registration, VAT Clearance Certificate upto 2009-2010, work experience or any other supporting paper.
- 2.2.3 “**Financial Bid**” should contain only EMD, and conditions and the Price Bid quoted on the tender Document as supplied by the Agency or in a separate Sheet but as per format supplied.
- 2.2.4 Commercial Terms and Conditions specifically indicating deviations to the terms and conditions stipulated in detailed Tender papers including payment terms ect.
- 2.2.5 Basis price quoted – The price quoted should be FIRM and as per the format provided in the tender Document. Price breakup of various components must be clearly indicated in the format, failing to comply to the above will result in cancellation or rejection of the Tender.
- 2.2.6 Any other particular information, which are required to be furnished as per detailed Tender papers but which have not been specifically indicated.
- 2.2.7 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 later shall indicated.
- 2.2.8 Date of opening of Financial Bid shall be intimated individually to those Firm who is qualified for Technical offer.
- 2.2.9 The Price Bid/offer of all other who are not qualified for Technical Bid shall be returned unopened to such parties under acknowledgement. For offer who qualify for Technical Bid due information shall be given through either Phone or Fax.
- 2.2.10 E.M.D. of either 1% or 2% on tender value subjected in the form of Bank Guarantee/Call deposit/FDR from any Nationalized or Scheduled Bank of India duly pledged in favour of



Director, MNREDA, Shillong should be furnished without which Tenders will be rejected

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- 2.2.11 All Tender paper should be seal and signed by an authorized representative of the Firm.
- 2.2.12 Supplier who are not manufacturing modules are to produce a letter from the manufacturer of Modules of Supplying of the same in case work is awarded to the.
- 2.2.13 The Bidder should produce a Trading License from the concern authority before starting of work.
- 2.2.14 A separate Agreement for both the work and the Annual/comprehensive maintenance contract has to be entered prepared by the Purchaser on a stamp paper duly signed by the Authorized person of the firm and the Purchaser.
- 2.2.15 The System quantity as indicated above are fixed but the quantity Model-II may be vary and confirm on placing of work order.
- 2.2.16 Each and every papers submitted for should be duly attested by the Government Official not below the rank of a Magistrate. All other papers issued by the Agency should be duly seal and signed by the authorized person of the Firm.
- 2.2.17 Commercial & Technical Bid should contains the following:
- (i) Tender paper (Part – ‘A’) as issued by the Agency duly signed and seal by the Authorized persons of the Firm.
  - (ii) Test report on Home System Model-II and SPV Street Lighting Systems issued from Proper Authority with effect from April, 2005 onwards
  - (iii) Technical Specification
  - (iv) Experience in Similar kind of works.
  - (v) Latest VAT and clearance Certificate upto 2009-2010
  - (vi) Any deviation with Justification thereof.
  - (vii) Any other.

2.2.18 **Financial Bid should contains:**

- (i) Tender Paper Part – ‘B’ as issued by the Agency duly signed and seal by the Authorized persons of the Firm.
- (ii) Price can be quoted on plain paper but it should be in the Format.
- (iii) Earnest Money deposit.

3. **GENERAL TERMS AND CONDITIONS OF CONTRACT:**

3.1 **PREFIX TO THE TERMS AND CONDITIONS OF CONTRACT:**

In the contract the following expression shall, unless the context otherwise requires have the meaning thereby respectively assigned to them.

- 3.1.1 **“The Government”** shall mean the Government of Meghalaya or the Government of India as may be the case.
- 3.1.2 **“MNREDA”** means Meghalaya Non Conventional and Rural Energy development Agency, Shillong.
- 3.1.3 **“Contract”** : Contract means the document forming the tender, acceptance thereof and the formal agreement executed between the MNREDA and the contractor, together with documents referred to therein otherwise it shall mean the Notice Inviting Tender, information and instructions to tender. Tender (including the warranty “Schedule of quantities and prices” and other schedule attached thereto) General conditions of contract, special conditions, if any, specifications, designs, drawing and letter of award thereof.
- 3.1.4 **“Contract Price”** : Means the price payable to the Contractor under the contract for full and proper performance of its contractual obligations.
- 3.1.5 **The “Contract”** shall mean the person or corporation of firm whose tender for the work has been accepted and his executors, administration and assigns.
- 3.1.6 **“Works”** Means the materials to be supplied and the work to be executed as defined and set out in the specifications and includes all extra work, addition, deletions, substitutions and variations ordered by the Engineer-in-charge in accordance with the provisions of the contract.

- 3.1.7 “**Engineer-in-charge**” : Means the Engineering Officer appointed by MNREDA to sign to cause to sign the contract agreement on behalf of the MNREDA and the Engineering Officer appointed by the MNREDA or its duly authorized representative to direct supervise and be in-charge of the works for the purpose of the contract.
- 3.1.8 “**The Consultant**” shall mean the firm or person as may be duly appointed by the Purchaser to act as Consulting Engineer for the purpose of work covered in the contract.
- 3.1.9 “**Specification**” : Means collectively all the terms and stipulations contained in this document including the conditions of contract, technical provisions and attachments thereto and list of corrections and amendments.
- 3.1.10 “**Site**” : Means the land on under in or through which the works are to be executed or carried out and such land as may be agreed upon between the corporation and the contractor as being reasonable and necessary for the carrying out of the works.
- 3.1.11 “**Tests on Completion**” shall mean all such tests as are prescribed by the specification to be made by the contractor to the satisfaction of the purchaser before the plant and equipment are taken over by the purchaser and this also includes those tests but specifically mentioned in the specification but required under various BIS codes and relevant Electricity Acts and Rules.
- 3.1.12 “**Commissioning**” shall mean the satisfactory, continuous and uninterrupted operation of the equipment/work as specified after all necessary initial tests, checks and adjustments required at site for a period of at least 15 days to the satisfaction of Engineer-in-charge.
- 3.1.13 “**Commercial Use**” shall means that use of the work which the contract contemplated or which it is commercially capable of.
- 3.1.14 “**Approval**” shall means the written approval of the Engineer-in-charge and of the statutory authorities, wherever such authorities are specified by any codes or otherwise.
- 3.1.15 “**Drawings**” : Means collectively all the accompanying general drawing as well as all detailed drawings, which my used from time to time.
- 3.1.16 “**Tender Drawings** : Refers to the drawings made part of the tender documents.
- 3.1.17 “**Details Drawings** “ To be furnished by the contractor for execution of the work and they will from part of the contractor.
- 3.1.18 “**Labour**” : Means all categories of labour engaged by the contractor, his sub-contractor and his piece workers for work in connection with the execution of the worked covered by the specification. All these labourers will be deemed to be employed by the contractor.

- 3.1.19 “**Fiscal Year** “ : Means year beginning on the first day of April and ending on 31<sup>st</sup> March in the succeeding year.
- 3.1.20 “**Day**” : Means calendar day beginning and ending midnight.
- 3.1.21 “**Month or Calendar month**” : Means not only the period from the first of a particular month but also any period between a date in a particular month and the date of previous to the corresponding date in subsequent month unless specifically stated otherwise.
- 3.1.22 “**Week**” : Means seven consecutive calendar days.
- 3.1.23 “**MNREDA Stores** “: Means the stores owned by the MNREDA.
- 3.1.24 “**Security Deposit** “ : Means all deposits whether in Government Securities. Fixed Deposit receipts or Bank Guarantee from a Nationalized Bank of India, amount deducted from interim payments or in any other from pledged to MNREDA for due performance of the contract and shall be adjusted in case of compensations, or penalties and which may be stand either in part or whole as the situation demands.
- 3.1.25 “**Urgent Works** “: Means any urgent measures, which in opinion of Engineer-in-charge, become necessary at the time of execution and /or during the progress of work to obviate any risk of damage necessary for security or for any other/reason the Engineer-in-charge may deem expedient.
- 3.1.26 “**Project** refers to Electrification of various villages with grid quality SPV System.
- 3.1.27 “**Manufacturer/Supplier**” refers to the party proposing to Design and Construct as specified complete or in part
- 3.1.28 “**Plant Equipment Stores**” : Means and include plant and materials to be provided under the contract.
- 3.1.29 “**Delivery of Plant Equipment**” shall be deemed to take plants equipment in accordance with the terms of the contract complete in all respect after approval by the Director MNREDA on report of Engineer-in-charge.

- 3.1.30 “**Letter of Intent**” Means the letter from the Director, MNREDA conveying his acceptance of the tender, subject to such reservation as may have been stated therein.
- 3.1.31 “**Sub-Contractors**” refers to party or parties having contract with the contractor and to whom any part of the contract has been sublet by the contractor with the consent in writing of the Engineer-in-charge.
- 3.1.32 “**Tone/M.T.**” Where used in these specifications shall mean metric tonne of 1000 Kg.
- 3.1.33 The terms and expressions not herein defined shall have the same meaning as assigned to them in the Indian Sale of Goods Act. 1977 or any such Act as the case may be.
- 3.2 **CONTRACTOR TO INFORM HIMSELF FULLY:**
- 3.2.1 The Contractor shall be deemed to have carefully examined the general conditions, specifications 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.
- 3.2.2 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 Engineer-in-charge in writing in order to remove such doubts.
- 3.2.3 Details of past experience during last 5 (five) year in the field of manufacture, Supply, Erection, testing and Commissioning of SPV System & Power Plants already executed & Commissioning especially in the North Eastern Region.
- 3.2.4 Documentary evidence in support of financial soundness of the Tendered for taking up the work.
- 3.2.5 A bar PERT Chart indicating completion Schedule for various items involved in the work within the stipulated completion period.

3.2.6 A Firm should be willing to sign a comprehensive Maintenance contract for 5 (five) years as modified by MNES in force during deciding of contract.

**3.3 AGREEMENT/ PURCHASE ORDER:**

3.3.1 After issue of Letter of Intent the Purchaser shall prepare the Agreement on stamped paper, as per the format given by MNREDA. The NIT, Schedule of items & rates, Terms and Conditions of contract and special terms and conditions and all important correspondences regarding finalization of contract shall form part of the agreement.

3.3.2 The expenses for completion and stamping the agreement shall be borne by the purchaser and the contractor shall be furnished a certified copy of the agreement free of cost.

**3.4 PERFORMANCE GUARANTEE:**

3.4.1 Within 30 days from the date of Contract Agreement the Contractor shall furnish performance guarantee for the due and faithful performance of the agreement/Letter of Intent along with other terms and conditions agreed to. In any one of the following forms:

- i) A Bank Guarantee from a Nationalized/Schedule Bank for an amount equal to 30% (thirty percent) of the contract value by way of guarantee for due and faithful performance of the agreement and other terms and conditions agreed to:
- ii) A Banker's Cheque or a demand Draft for the Guarantee amount as specified above.

3.4.2 Such agreement shall be valid and binding, notwithstanding such variations, alterations or agreed under these general conditions during the entire warranty period as per clause No. 3.4 of these general conditions the contractor shall at his own cost, get the validity period of Bank Guarantee, furnished by him extended from time to time till the completion of the purchase fifteen days before the expiry of the original Bank Guarantee or any extension thereof. In case the extended revised Bank Guarantee is not received by the purchaser within the specified period the purchaser, entirely at his discretion, shall be at liberty to cash the aforesaid Bank Guarantee.

3.4.3 On due completion of work in all respect and on expiry of the maintenance or warranty period as per Clause No. 3.4 of these general conditions, the Bank Guarantee/amount paid through bank Guarantee or Banker's Cheque under Clause 3.4.2 will be returned to the contractor without any interest on representation of an absolute "NO DEMAND

CERTIFICATE" from purchaser and up on return, in good condition, of any specification, drawings, Technical literature, samples, tools and tackles or any property belonging to the purchaser which may have issued to the contractor Provided always that MNREDA shall be entitled to retain, set off, deduct or adjust any claim against the contractor from the money deposited with or becoming payable to MNREDA.

**3.5 CONTRACT DRAWINGS:**

3.5.1 The Tendered shall submit with the Tender, the drawings enumerated below and in various other sections of the specifications:

- (i) Write up on Model – II, SPV Domestic Home Lighting System along with detail drawings & Block Diagram of System.
- (ii) Write up & drawing of SPV Street Lighting Systems along with installation details of System.

3.5.2 These drawings shall show sufficient overall dimensions, clearances and space requirements of all apparatus to be furnished, to enable the Purchaser to determine the design and layout of the installation.

3.5.3 The contractor within 30(thirty) days after signing of contract, shall submit in triplicate to the Director, MNREDA for his approval drawings of the General Arrangement and such other detailed drawings as otherwise specified elsewhere in the specification or otherwise reasonable necessary.

3.5.4 Within 30 days of receipt of such drawings, the Director or Engineer-in-charge shall signify his approval or otherwise of the same, and in the event of disapproving the drawing the contractor shall submit further drawings for approval.

3.5.5 No extension of time shall be allowed on account of the time consumed in submission and examination of defective drawings and resubmission of the corrected drawings.

- 3.5.6 With a reasonable period from the date of receipt of approval, the contractor shall submit 2 sets of drawings of equipment layout and civil work layout of SPV lighting system.
- 3.5.7 These drawings, when so signed, shall become the property of the purchaser. No departure from the drawings in any way will be allowed in execution except with written permission of the Director, MNREDA.
- 3.5.8 The Contractor, if required by the Director/Engineer-in-charge shall supply additional copies of any drawing without charging any extra-cost, which may reasonable be required for the purpose of the contract.
- 3.5.9 Any Tender drawings, technical data or correspondence which from the basis of an order or contract, aforesaid, or which may be furnished by the contractor for the Purchaser's approval or information as provided under the said order or contract shall be in English and if it is in any other language a complete, translation in English shall be duly furnished.
- 3.5.10 The contractor shall be responsible for and shall pay for any alternations of the work due to any discrepancies, errors and omissions in the drawings or other particulars supplied by him whether such drawings or particulars have been approved by the purchaser or not, provided that such discrepancies errors or omission are due inaccurate information or particulars furnished to contractor by the Purchaser. Any alterations in the work necessitated by reason of such inaccurate information of particulars shall be paid for by the Purchaser.
- 3.6 **SUBLETTING OF CONTRACT:**  
The Contractor shall not without the prior consent in writing of the Purchaser, assign or sublet or transfer his contract, or a substantial part thereof other than raw materials or for any part of the work of which makers are named in the contract provided that any such consent shall nor relieve the Contractor from any obligation duty or responsibility under the contract.
- 3.7 **PATENT RIGHTS:**  
In the event of any claim or demand being made or action being brought against the purchaser for infringement or alleged infringement of patent rights in respect of any machine, plant, work or things used or supplied by the contractor in respect of any method of using or working by the Purchaser, such machine plant work or thing, the contractor shall indemnify the Purchaser from and against such claims whatsoever or demand and costs and expenses arising



from or incurred by reasons of such claim or demand. The Purchaser shall notify the Contractor immediately on receipt of any claim and that the contractor shall be at liberty. If he so desires with the assistance of the Purchaser, if required, but at the contractor's own expense

to conduct all negotiations for the settlement of the same/or any litigation that may arise there from provided that no such machine, plant, work or things shall be used by the Purchaser for any purpose in any manner other than that for which have been supplied by the contractor and specified under the contract.

### **3.8 MATERIALS AND WORKMANSHIP:**

3.8.1 All materials shall be of the best quality and workmanship capable of satisfactory operation under the operating and climate conditions as may be specified. Unless otherwise specified, they shall conform in all respect to the latest edition of the relevant BIS specification where Indian specifications apply.

3.8.2 All equipment and materials shall be supplied by the Contractor at site. The Contractor shall arrange for transportation, loading, unloading and safe storage of materials at site.

3.8.3 The Contractor shall offer equipment manufactured in accordance with other well recognized standards, but shall in that case, supply a copy in English of the Standard Specification adopted by them and shall clearly mention in what respect such standard specified differing from Indian Standard specifications, where Indian Standard Specifications exists.

3.8.4 The Plant equipment and materials offered by the contractor should comply with one consistent set of Standards only as far as possible.

### **3.9 INTER-CHANGEABILITY:**

All the parts shall be made accurately to Standard gauges so as to facilitate replacement and repair. All corresponding parts of similar apparatus shall be inter-changeable.

**3.10 PACKING AND MARKING:**

3.10.1 The Contractor shall be responsible for security protecting and packing the plant & equipment as per prescribed standards in force to withstand the journey and ensuring safety of materials and also arrival of materials at destination in original conditions and good for contemplated

use. Packing case size & weight shall take into consideration the remoteness of the goods final destination and absence of heavy material handling facilities at all points in transit.

Each bundle or package shall have the following marking on it:

- (a) The name & address of the consignee.
- (b) Destination
- © Relevant marks, reference number etc. for identification.

3.10.2 Packing lists of materials shall be provided in each-package to facilitate checking up of the contents at the destination.

**3.11 POWER TO VARY/OMIT WORKS:**

3.11.1 No alternations, amendments, omissions, additions, subtractions or variation of the work (hereinafter referred to as 'variation') under the contract shall be made by the contractor except as directed by the Engineer in-charge. The Engineer-in-charge shall have full power, subject to provisions hereinafter contained from time to time during execution of the contract by notice in writing to instruct the contractor to make such variations and be bound by the same conditions though the said variations occurred in the contract.

3.11.2 If any suggested variations would in his opinion of the contractor if carried out, prevent him from fulfilling any of his obligations or guarantees, under the contract, he shall notify the Engineer-in-charge thereof in writing, and the Engineer-in-charge shall decide forthwith whether or not the same shall be carried out and if Engineer-in-charge confirms his instruction, the contractor shall carryout the work as per instruction.

3.11.3 The differences in cost if any occasioned by such variations shall be added to or deducted from the contract price, as the case may be.

3.11.4 In event of Engineer-in-Charge requiring any variations, reasonable and proper notice shall be given to the contractor as well as to enable him to make arrangements accordingly and in cases where goods or materials are already prepared procured, or any designs, drawings or patterns made or work done that require to be altered a reasonable sum in respect thereof shall be allowed by the Engineer-in-Charge.

3.11.5 In every cases in which the contractor shall receive instructions from the Engineer-in-charge for carrying out any work, which either then or later, will in the opinion of the contractor involve a claim for additional payment, the contractor shall as soon as reasonable possible after the receipt of such instructions inform in writing the Engineer-in-Charge of such claim for additional.

### **3.12 NEGLIGENCE:**

3.12.1 If the contractor shall neglect to manufacture or supply the plant and equipment with due diligence and expeditious or shall refuse or neglect to comply with any reasonable order given to him in writing by the Engineer-in-Charge or shall contravene any provisions of the contract, the purchaser may give fifteen days notice in writing to the contractor to make good the failure, neglect or contravention complained of any if the contractor shall fail to comply with the notice within reasonable time from the date of serving thereof in the event of failure, neglect or contravention capable of being made good within that time, then in such case if the Purchaser shall think fit, it shall be lawful for him to take the manufacture or supply of plant wholly or in part, out of the contractor's hand and give it to another person on contract at a reasonable price and the Purchaser shall be entitled to retain and supply and balance which may be otherwise due on the contract by him to the contractor or such part thereof as may be necessary, to the payment of the cost of manufacture or supply such plant as aforesaid.

3.12.2 If the cost of executing the work as aforesaid shall exceed the balance due to the contractor and the contractor fails to make good such deficiency, the Purchaser shall take action in the manner it may consider deem fit in terms of the contract.

**3.13 COMPLIANCE WITH REGULATIONS:**

The Contractor shall comply with all applicable laws of ordinance, codes, approved standards, rule and regulations and shall procure all necessary Municipal, Panchayat and Government permits & License etc. at this own cost. The contract shall leave the Purchaser and the Engineer-in-charge harmless as a result of any infractions thereof.

**3.14 DEATH, INSOLVENCY AND BREACH OF CONTRACT :**

The Purchaser may at anytime by notice in writing summarily determine the Contract without compensation to the contractor in any of the following events.

3.14.1 If the contractor being an individual or if a firm, any partner thereof shall at anytime, be adjusted insolvent or shall have an receiving order or order from administration of his estate made against him or shall taken any proceeding for compensation under any insolvency.

Act for the time being in force or make any conveyance or assignment with his creditors or suspect payment or if the firm be dissolved under partnership Act. Or

3.14.2 If the contractor being a Company is wound up voluntarily or by the order of a court or a Receiver. Liquidator or Manager on behalf of the Debenture holder is appointed or circumstances have been arisen which entitle the Court of debenture holder to appoint a Receiver, Liquidator of Manager.

3.14.3 If the contractor commits any breach of the contract not herein specifically provided for, provided always that such determination shall not prejudice any right or action or remedy which shall have accrued or shall accrue thereafter to the Purchaser and provided also that the contractor shall be liable to pay to the Purchaser. The contractor shall under no circumstances be entitled to pay again or repurchase.

**3.15 DATE OF COMPLETION :**

The contractor shall provide full programme of the supply in detail and delivery schedule thereto. Strict adherence and guaranteed delivery schedule mentioned in contract conditions shall be essence of the contract and delivery must be maintained. The work must be completed within 6(six) months from the date of signing of contract.

**3.16 DELAY IN EXECUTION OR FAILURE TO SUPPLY :**

3.16.1 If the work is delayed on account of :

- (i) Increase in quantity of work.
- (ii) Suspension of work as ordered by the MNREDA
- (iii) Force Majeure conditions
- (iv) Any other causes which in absolute discretion of the Engineer-in-Charge are beyond the contractor's control.

The contractor shall appeal to MNREDA in the form of a written application before expiry of the contract period bringing out the causes responsible for the delay for granting suitable time extension.

3.16.2 MNREDA if satisfied that the delay is not attributed to the fault of the contractor, may grant suitable time extension. However, if the contractor is found responsible for any delay completion of the work, formal time extension shall also be granted by the MNREDA but reserving its right to recover a sum towards liquidated damage, for late completion as per clause No.3.17 of this contract.

3.16.3 However, if the contractor fails to deliver the plant or fails to start the work within specified time frame after the receipt of work order or leave the work site after partial execution of the work, MNREDA may without prejudice to the right of the purchase to recover damages for breach of trust of the contract may impose the following penalties.

**3.17 LIQUIDATE DAMAGE :**

Scheduled date of completion shall be treated as the essence of the contract liquidated damage shall be imposed at the rate of 0.5% of the unexecuted value per week of delay up to a

maximum of 2.5% at the sole discretion of the Engineer-in-charge. If there is any valid and acceptable reason for delayed execution supported with details of hindrances as per hindrance register, the Engineer-in-charge may, at his discretion consider to lower down the penalty rate or even waive off the penalty on having written application from the contractor.

**3.18 RISK PURCHASE :**

Purchase or authorize the purchase elsewhere without notice to the contractor, on the account and at the risk of the contractor of the plant so delivered or orders plant/equipment of similar description (opinion of the purchaser shall be final) without canceling the contract.

**3.19 BREACH & CANCELLATION OF THE CONTRACT :**

3.19.1 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 absolutely determine. The decision of MNREDA in this regard shall be final and binding.

3.19.2 The purchaser may cancel the contract or a portion thereof and if so purchase or authorized purchase of the plant/equipment not so delivered or order plant equipment of similar description (opinion of the purchaser shall be final) at the risk and cost of the contractor. If the contractor had defaulted in the performance of the original contract, the purchaser shall have the right to ignore his tender for risk purchase even though lowest.

**3.20 FORCE MAJEURE CONDITIONS :**

3.20.1 In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under this agreement, relative, obligation of the party affected by such majeure shall be treated as suspended during which the force majeure clause last.

3.20.2 The term "Force Majeure" shall have herein mean riots (other than among the contractor's employee), civil commotion, war (whether declared or not), invasion, act of foreign enemies hostilities, civil war, rebellion, revolution, insurrection, military coup to usurp power,

damage from aircraft, nuclear fission, acts of god such as earthquake (above 7.0 magnitude on richer scales), lighting, unprecedented floods, fires, landslides, not caused by contractors negligence and other causes which the contractor has no control and accepted as such by the Engineer-in-charge whose decision shall be final and binding.

3.20.3 Up on occurrence of such cause and up on its termination, the party alleging that it has been rendered unable as aforesaid thereby shall notify that the other party in writing by registered notice within 72(seventy two) hours of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of its claim.

3.20.4 Time for performance of the relative obligation suspended by the force majeure shall stand extended by the period for which such clauses lasts.

3.20.5 If works are suspended by force majeure conditions lasting for more than four months the Purchaser shall have the option of canceling this contract in whole or part thereof at its discretion. However, the purchaser shall make payment to the contractor the amount for which the materials has been dispatched from the factory and or shall be ready for dispatch within the next thirty day of commencement of Force Majeure condtions.

3.20.6 Contractor shall not claim or compensation for “Force Majeure conditions” and shall take appropriate steps to insure mean and materials utilized by him under the contract well in time.

3.21 **PROGRESS REPORT OF WORK :**

The Contractor shall submit weekly/monthly progress report on execution of works conforming to bar chart in case of any slippage(s) or delay in execution of work reasons for such delay along with details of hindrances will be submitted by the contractor along with modified Bar Chart (if required).

3.22 **INSURANCE :**

(a) **For materials**

The contractor shall arrange for transit and erection insurance of the materials at his own cost. MNREDA shall, in no case be held responsible for any lose, damage or theft of materials/equipment so long the plant continue to remain under

(b) **For workmen**

The contractor should arrange for providing insurance cover to his workmen under Workmen's Compensation Act of similar Rules Acts as applicable during the presidency of the contract for covering risk against any mishap to his workmen. MNREDA will not be responsible for any such loss or mishap.

3.23 **STATUTORY ACTS, RULES AND STANDARDS :**

The work shall be executed in conformity with the relevant standard or Bureau of Indian Specification (or equivalent International Standard). Indian Electricity Rules, 1956 (as amended upto date), Indian Electricity Act and relevant Rules in vogue at the time of execution.

3.24 **TOOLS & TACKLES :**

The contractor shall provide all tools and tackles conforming to relevant BIS safety and technical standard for proper execution of work. MNREDA shall in no way, be responsible for supply of any tools and tackles for implementation of the work.

3.25 **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.

3.26 **STOPPAGE OR WORK :**

MNREDA shall not be responsible for any damage or loss caused due to "force majeure" conditions. The contractor should make provision for adequate insurance cover against such loss or damages MNREDA shall not be responsible and not liable to pay any compensation due to stoppage of work as a reaction from local public due to any undue action on the part of the contractor causing annoyance to local people.



3.27 **HINDRANCE REGISTER :**

The contractor may also maintain a hindrance register where reasons for delay may be recorded from time to time and at the time of occurrence of the hindrance and get it duly certified by the Engineer-in-charge or his authorized representative.

3.28 **RESPONSIBILITY OF THE CONTRACTOR :**

The contractor shall guarantee and be entirely responsible for the execution of the contract in accordance with the specification, schedules and appendices. He shall further guarantee and be responsible for the quality and workmanship of all materials and completed works, correct designs and drawings, correct delivery of materials, erection, testing and commissioning, within the guaranteed completion and warranty period of 5(five) years from the date of commissioning on completion of commissioning a separate agreement shall have to be signed in their respect for comprehensive maintenance contract.

3.29 **RIGHT OF MNREDA TO MAKE CHANGE(S) IN DESIGN :**

MNREDA shall have the right to require the contractor to make any change in the design which may be necessary in the opinion of the Engineer-in-charge to make the plant and materials conform to the provisions and contents of the specification without extra cost to the purchaser.

3.30 **DRAWINGS AND MANUALS :**

All necessary erection/construction, drawings, erection, testing and commissioning manuals etc. shall be supplied by the contractor as and when required. Three sets of drawings, manuals etc. shall be submitted by the contractor on completion of the work.

3.31 **INSPECTION AND TESTING :**

3.31.1 The Director and his duly authorized representative shall have, at all reasonable time access to the contractor's premises, and shall have the power, at all reasonable times, to inspect and examine the materials and workmanship of plant during its manufacture shop assembly the test and if part of the plant is being manufactured in another premise the contractor shall

obtained from the Engineer-in-charge or his duly authorized representative, necessary permission to inspect it as if the plant was manufactured at contractor's own premises.

- 3.31.2 The Engineer-in-charge shall, on giving seven day's notice in writing to the contractor, setting out any grounds of objections which he may have in respect of the work, be at liberty to reject all or any plant or workmanship connected with such work, which in his opinion defective for any reason whatsoever, provided that, if such notice be not set to the contractor within reasonable time after the grounds on which notice is based have come to reject the said plant or workmanship on such grounds. Unless specifically provided otherwise, all tests shall be made at the contractor's works before shipment.
- 3.31.3 The contractors shall, if required, give the Engineer notice of any plant being ready for testing, and the Engineer or his authorized representative, if so desired, shall on giving twenty four hour's previous notice in writing to the contractor attend at the contractor's premises within 15 days of the date on which the material is notified as being ready failing which or alternatively if the purchaser at its own discretion waives the inspection and testing, the contractor may proceed with the tests which shall be deemed to have been made in the Engineer's presence, and he shall forthwith three sets of duly certified copies of test results and certificates to the Engineer-in-charge for approval of the purchaser. The equipment shall be dispatched only after the approval of the test certificates by the purchaser in writing.
- 3.31.4 In all cases where the contract provides for tests whether the premises of the contractor or any sub-contractor, the contractor except where otherwise specified, shall provide free of charge such labour, materials, electricity, fuel, water, stores, apparatus and instruments as may reasonably be demanded to carry out efficiently such tests of the plant in accordance with the contract, and shall give facilities to the Engineer-in-charge or his authorized representative to accomplish such testing.
- 3.31.5 If the inspection is done through and independent authority, at the option of the purchaser, the inspection fee, if any shall be paid by the purchaser.

3.31.6 When the inspection and the tests have been satisfactorily completed at the contractor's works, the Engineer shall issue a certificate to that effect.

3.31.7 Neither the waiving of inspection nor acceptance after inspection by the purchaser shall, in any way, relieve the contractor of the responsibility of supplying the plant and equipment strictly in accordance with specification and drawings etc.

### 3.32 **DELIVERY OF SYSTEM :**

3.32.1 The contractor shall deliver the plant 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.

3.32.2 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 triplicate and packing account of all stores delivered or dispatch by him.

3.32.3 In case of any occurrence of loss or damage in transit up to destinations, 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.

### 3.33 **ENGINEER'S DECISION :**

In respect of all matters which are left to the decision of the Engineer-in-charge, including the granting or withholding certificates, the Engineer shall if required to do so by the contractor, give in writing a decision there on and his reason for such decision. If the decision is not accepted by the contractor the matter, will, at the request of the contractor be referred to arbitration under the provision for arbitration hereinafter contained, but, subject to the right of reference to arbitration, such decision shall be final and binding on the contractors and the purchaser.

### 3.34 **LIABILITIES FOR ACCIDENTS AND DAMAGES DURING TRANSIT :**

The contractor shall be responsible for loss damages or depreciation to goods or plant/equipment up to delivery at site.

**3.35 DEDUCTION FROM CONTRACT PRICE :**

- 3.35.1 All costs, claims, damages or expenses which the Purchaser may have for, which under the contractor is liable, may be deducted by the Purchaser from “Performance Guarantee” or from any money due or which become due by him to the contractor under this contract.
- 3.35.2 Any sum of money due and payable to the contractor (including Performance Guarantee returnable to him) under this contract may be appropriated by the purchaser.
- 3.35.3 It is an agreed term of the contract that the sum of money withheld or obtained under this clause by the purchaser will be kept withhold or retained as such by the purchaser or till this claim arising out of in the same contract is either mutually settled or determined by the arbitrator, or by competent court, as the case may be, and that the contractor shall have no claim for interest or damages whatsoever on this account or any other account in respect of the sum of money withheld or retained under this clause and duly notified as such to the contractor.

**3.36 TERMS OF PAYMENT :**

Subject to any deduction which the purchaser may be authorized to make under this contract, and or to any additions or deductions provided for in this contract, the bidders shall be entitled to the following payment terms.

- 3.36.1 All payments shall be made Indian Rupees, unless otherwise specified in the contract.
- 3.36.2 Mobilization Advance : The contractor shall be paid 30% (thirty percent) of contract value as mobilization advance against a Bank Guarantee for equivalent amount from a nationalized bank Pro-rata recoveries of this advanced amount shall be made from subsequent running bills.
- 3.36.3 40% (forty percent) of the contract value of the plant/equipment shall be paid against receipt of materials at site in good conditions. Running payment equivalent to 40% of the price plant/equipment supplied shall be made.
- 3.36.4 20% (twenty percent) of the contract value of the plant/equipment shall be paid on complete installation and commissioning.

- 3.36.5 Balance 10% (ten percent) to be paid at the end of five years of warranty period or against submission of equivalent Bank Guarantee valid for a period of two years from the date of commissioning.
- 3.36.6 The Annual /comprehensive contract payment shall be made on percentage of 30%,30% and 40% at the end of 3<sup>rd</sup>,4<sup>rd</sup> and 5<sup>th</sup> year basis.
- 3.36.7 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 form the contractor from his/its assets/amount due against performance Guarantee.

**3.37 TESTS ON COMPLETION :**

Whenever possible, all shop tests shall be carried out before shipment. It will be necessary for the final tests as to performance and guarantees to be held over until the plant is erected at site, they shall be carried out the presence of contractor's representative within reasonable time of completion of erection. If the results of these tests are not within reasonable time of completion of erection. If the results of these tests are not within the margin specified. The tests shall, if required be repeated after the plant is ready for re-tests, and the contractor shall bear all reasonable expenses to which he may be put such tests.

**3.38 REJECTION OF DEFECTIVE PLANTS :**

- 3.38.1 If the completed plant, or any portion thereof, before it is taken over found to be defective or fail to fulfill the requirements of its contract, the Engineer shall give to the contractor notice stating the particulars of such defect good, or alter the same to make it comply with the requirements of the contract. If the contractor fails to do so within a reasonable time, the purchaser may reject and replace, at the cost of contractor, the whole or any portion of the plant, as the requirement of the contract. Such replacement shall be carried out by the purchaser within a reasonable time and a reasonable price and where possible to the same specifications under competitive conditions. In case of such replacement by the purchaser, the contractor shall be liable to pay to the purchaser the extra cost, if any of such replacement, be delivered and /or erected as provided for in the contract agreement. The extra cost of may be ascertained as the difference between the price paid by the purchaser as also any sum paid

by the purchaser does not so replace the defective plant within a reasonable time, the contractor shall be liable only to repay to the purchaser all money paid by the purchaser to him in respect of such plant.

3.39.2 In the event of such rejection, the purchaser shall be entitled to use of the plant in responsible and proper manner till a time reasonable sufficient to enable him to obtain other replacement plant. During the period the rejected plant is used commercially, the contractor shall be entitled to a reasonable sum as payment for such use. Provided that the decision of the Engineer-in-charge in regard to quantum of such payment shall be final and binding on the contractor.

**3.39 GUARANTEE :**

3.39.1 The supplier must ensure that the goods supplied under the contract are new, unused and of most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the contract.

3.39.2 That guarantee period of the system will be 3(three) years or 60(sixty) calendar months from the date of commissioning whereas for modules the guarantee should be 10(ten) years/specified by the Govt.of India MNES from time to time. The contractor shall remain liable to replace any defective parts that may develop in the plant of his own manufacture or that of his sub-contractors under the conditions provided for by the contract under proper use, and arising solely from faulty design, materials or workmanship, provided always that such defective parts as are not, repairable at site and are not essential in the meantime to the contractor's works at the expenses of the contractors unless otherwise arranged.

3.39.3 If it becomes necessary for the contractor to replace or renew defective parts of the plants under this clause, the provisions of the first paragraph of this clause shall apply to the parts of the plant so replaced or renewed until the expiration of six months from the date of such replacement or renewal or until the end of the above mentioned period of 60(sixty) months.

3.39.4 If any defects not remedied within a reasonable time, the purchaser may proceed to do work at the contractor's risk and expenses, but without prejudice to other rights which the purchaser may have against the contractor in respect of such defects.

- 3.39.5 At the end of guarantee period, the contractor's liability shall cease. In respect of goods not covered by the first paragraph of this clause, the purchaser, shall be entitled to the benefit of such guarantee given to the contractor by the original supplier or manufacturer of such goods.
- 3.39.6 During the comprehensive maintenance contract/ guarantee period of 36(thirty six) calendar months, the contractor shall be responsible for any defects in the work due to faulty workmanship or due to use of sub-standard materials in the work. Any defects in the work during the guarantee period shall therefore, be rectified by the contractor without any extra cost to MNREDA within a reasonable time from the date of receipt of such intimation from MNREDA failing which MNREDA shall take rectification work at the cost of the contractor.
- 3.40 COMPREHENSIVE MAINTENANCE CONTRACT PERIOD OF POWER PLANTS AND SYSTEMS :**
- 3.40.1 The contractor shall maintain and regularly check monthly or quarterly the systems for a period of 5(five) years from the date of commissioning.
- 3.40.2 The Contractor will bear the cost of all consumable, spare parts and repairing expenses during the CMC period.
- 3.40.3 The Purchaser reserves the option at his discretion to request the contractor to continue the CMC of the plant from the first day of 61<sup>st</sup> calendar month. The purchaser will bear the cost of replacement spare and service charges for this period, on mutually agreed rates.
- 3.40.4 The contractor shall maintain performance data of the plant and submit the same to MNREDA at least once in every month/quarterly.
- 3.40.5 The security of the power plant will rest with the purchaser
- 3.40.6 The deputed personnel shall be qualified and well trained so that they can handle any type of operational hazards quickly and timely.
- 3.40.7 The deputed personal shall have to keep daily log sheets for the power plant as per approved format to be supplied by MNREDA after commissioning of the plant.
- 3.40.8 The deputed personnel shall be in a position to check and test all the equipment regularly, so that, preventive maintenance and repair, if required, could be taken well in advance to save any equipment from damage. Any abnormal behavior of any equipment shall be brought to the notice of MNREDA immediately for taking appropriate preventive action.

- 3.40.9 The deputed personnel shall keep the power plant clean at all times.
- 3.40.10 Normal and preventive maintenance of the power plant, such as cleaning of module surface, topping of batteries, tightening of electrical connections, changing of tilt angle of module mounting structure, cleaning and greasing of battery terminals etc. as required.
- 3.40.11 Deputed personnel will operate the plant in accordance with the availability of solar energy stores in the battery bank. Under no circumstances, the operator shall run the power plant damaging the battery bank, in case of non-availability of solar power.
- 3.40.12 During CMC period, if there is any loss or damage of any equipment of the power due to mishandling mismanagement or due to other reasons whatsoever, the contractor shall be responsible for immediate replacement/rectification. The damaged component may be repaired, if it is understood after examination that after repairing, the performance of the component shall not be degraded. Otherwise the defective component shall have to be replaced by new one without any extra cost.
- 3.41 **ARBITRATION :**
- 3.41.1 Except where otherwise provided if at any time question dispute or difference whatever shall arise between the contractor and the purchaser upon or in the relation to or 1 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 arbitrator appoint by MNREDA at the time of dispute after ascertaining the terms of reference mutually.
- 3.41.2 The Arbitrator will preferably be a member of Arbitration Council and arbitration proceeding will take place as per provisions or Arbitration Act 1940 or any statutory modifications or re-enactment thereof and the rules made there under and for the time being in force shall apply.
- 3.41.3 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 proceedings except to the extent which may be in dispute.
- 3.42 **COURT OF COMPETENT JURISDICTION :**
- The Courts of Guwahati High Courts, Shillong Bench will only have jurisdiction in this case.



**3.43 CONSTRUCTION OF CONTRACT :**

The contract shall in all respect be constructed and operated as a contract as defined in the Indian Contractor Act. 1972 and all the payments thereunder shall be made in Indian Rupees unless otherwise specified.

**3.44 ADDRESS OF THE CONTRACTOR AND NOTICES AND COMMUNICATION ON BEHALF OF THE PURCHASER.**

3.44.1 For all purchase of the contract, including arbitration thereunder, the address of the contractor mentioned in the tender shall be the address to which all communications addressed to the contractor shall be sent, unless the contractor had notified a change by a separate letter containing no other communication and sent by registered post acknowledged due to the Engineer. The contractor shall be solely responsible for the consequence of an omission to notify a change of address in the manner aforesaid.

3.44.2 Any communication or notice behalf of the purchaser in relation to the contract may be issued to the contractor by Engineer and all such communication and notice may be served on the contractor either by registered post or under certificate of posting or by ordinary post or by hand delivery at the option of the officer.

**3.45 CONTRACT DOCUMENTS & MATTERS TO BE TREATED AS CONFIDENTIAL :**

All documents, correspondence, decision and other matters concerning the contract shall be considered as confidential and restricted nature by the contractor and he shall not divulge or allow access thereto unauthorized person of any kind.

**3.46 FINAL BILL :**

The final bill relating to the contract shall be prepared only when the equipment have been installed and tested for final acceptance and it will include the adjustment of all claims against the contractor by the Engineer-in-charge and awarded in his favour by the arbitrator up to date of preparation of the final bill.

**3.47 ALLOTTMENT OF WORK :**

The purchaser may be allotted the work to more than 1(one) firm in the observation that the work should be completed in the scheduled/targeted time.

**4. SCOPE OF WORK & TECHNICAL SPECIFICATION :**

4.1 The scope of work shall be include.

1.1.1 Supply, installation, testing and commissioning of SPV Domestic Home Lighting System of MNES approved Model-II with Integration of SPV Street Lighting System of 74 Wp.

1.1.2 The Annual Maintenance Contract for all the system installed in these 66 Nos. of villages for 3(three) years after end of the 2 (two) years warranty period.

**4.2 SPECIFICATION FOR DOMESTIC HOME LIGHTING SYSTEM ;**

**4.2.1 TYPE OF SYSTEM –MODEL-2 OF MNES APPROVED MODEL.**

**4.2.2 SOLAR PV MODULES :**

- i) Solar Module shall consist of redundantly interconnected 36 Photovoltaic cell and the peak power of 37 Wp under STC.
- ii) SPV modules must be tested and certified by an independent testing laboratory that us accredited with ISO guide 25.
- iii) Photo electrical conduction efficiency of SPV modules should be greater than 12% Modules shall be made of high transitivity glass front surface giving high encapsulation gain and silicon rubber edge sealant for modules protection & mechanical support.
- iv) Modules shall perform satisfactorily in relative humidity upto 100% with temperature between 10°c and 90°c and to withstand a gust upto 200 Km/Hr. from back side of the modules. Modules shall be of crystalline type employing lamination technology using established polymer and toddler laminate.
- v) The rated power output of modules shall not vary more than 5% from the average power rating.
- vi) A minimum warranty of 10 years is available with degradation of power generated not exceeding 10% over the entire 10 years period.
- vii) The fill factor of modules shall not be less than 0.70
- viii) The module should be provided with a junction for provision of external screw terminal connection and with an arrangement for low voltage drop by bypass/blocking diode.
- ix) Data sheet should be furnished as follows :-

- (a) Module type :-----
- (b) Module Dimension :-----
- © No of cell & Wattage :-----
- (d) Solar cell manufacturer type :-----

- (e) Make of solar module :-----
- (f) Solar Module frame material :-----
- (g) Nominal voltage :-----
- (h) Operating voltage of solar Module :-----
- (i) Peak power voltage(Vmp) at 50°c :-----
- (j) Pear power current(Imp) at 50°c :-----
- (k) Open circuit voltage(Voc) at 50°c :-----
- (l) Short circuit (Ioc) at 50°c :-----
- (m) Maximum temperature rise of  
Solar cell under severe working  
Conditions over maximum ambient  
Temperature :-----
- (n) Operating temperature conditions :-----  
of modules.
- (o) Weight of each module :-----

x) Photovoltaic modules should have a distinctive marked the name of manufacturer Distinctive Logo, Model No. and serial No.

#### 4.2.3 **FRAME FOR MODULE :**

- (i) The structure of modules shall be made of hot dip galvanized MS angle of size as per size of the modules and embedded to G.I.Pipe of 2” size with 1m long at a proper angle with nut and bolts system to fix to a roof top or pole. All nuts and bolts shall be made of very good quality stainless steel SS-304.
- (ii) The structure shall be design to allow easy replacement of any modules.
- (iii) All fastener shall be of stainless steel SS-304.
- (iv) Metallic frame structure with corrosion resistance pain to be fixed as indicated on (ii) above on the roof of the house to hold the SPV module. The frame structure should have a provision to adjust its angle if inclination to the horizontal between 0-45°, so that it can be installed at the specific till angle.

#### 4.2.4 **CONNECTION WIRE/CABLE :**

Necessary cable/wire should be provided as per requirement from module to charge controller and battery with minimum of 10m long. Size and make of cable should be specified clearly.

#### 4.2.5 CHARGE CONTROLLER/ELECTRONICS :

- (i) The inverter should be quasi sine wave/sine wave type with frequency in the range of 20-30 Khz. Half wave operation not acceptable.
- (ii) The total electronic efficiency should be at least 80%.
- (iii) No blackening or reduction in the lumen output by more than 10% should be observed after 1000 ON/OFF Cycles (two minutes ON followed by four minutes OFF 1-one cycle)
- (iv) The ideal current consumption should not be more than 10 mA.
- (v) Electronics should operate at 12V and should have temperature compensation for proper charging of the battery through out the year.
- (vi) Necessary lengths of wires/cables switches suitable for DC use and fuses should be provided.
- (vii) Adequate protection is to be incorporated under No load conditions i.e. when lamps are removed and the system is switch ON.
- (viii) The system should have protection against battery over charge and deep discharge conditions.
- (ix) Fuses should be provided to protect against short circuit conditions.
- (x) Controller should also have a provision for Fan connection inspite of the fact as stated at section 4.8.1.

#### 4.2.6 LAMPS :

- (i) The lamps will be of compact fluorescent (CFL) type either 4 pin/2 pin types with rating of 5 W/9 W. For 4-pin type CFL, a suitable preheating circuit must be provided.
- (ii) The light output from lamps should be around 600+/- 5% lumens for 9 CFL and 900 +/- 5% lumen for 11 W CFL. No blackening or reduction in the lumen output by more than 10% should be observed after 1000 ON/OFF cycle (two minutes on followed by four minutes OFF in on cycle).

- (iii) The lamps should be housed in an assemble suitable for indoor use with a reflector on its back, while fixing assembly, the lamp should be held in a base up configuration.
- (iv) The details specification, make of lamp should be furnished by the firm/supplier.

#### 4.2.7 **BATTERY :**

- (i) The battery will be of flooded electrolyte type, positive tubular plat low maintenance lead acid battery of Exide/equivalent make.
- (ii) The battery will have a minimum rating of 12V of 40 Ah at C/10 discharge rate depending on model.
- (iii) 75% of the rated capacity of the battery should be between fully charged and load cut off conditions.
- (iv) A vented metallic box with acid proof corrosion paint for housing the storage battery indoors should be provided.
- (v) Specification details and write up on battery should be furnished.

#### 4.2.8. **OTHER FEATURES :**

- (i) The system be provided with 2 LED indicators a green light to indicate charging in progress and a read LED to indicate deep discharge conditions of the battery. The green LED should glow only when the battery is actually being charged.
- (ii) There will be a name plate on the system which will give :
  - (a) Name of the manufacturer of Distinctive Logo.
  - (b) Serial Number
- (iii) Components and parts used in solar home systems should confirm to the latest BIS specifications, wherever such specifications are available and applicable.
- (iv) The PV module(s) will be warranted for a minimum period of 10 years from the date of supply and the solar home system (including the battery) will be warranted for a period of two years from the date of supply.

- (v) The warranty Card to be supplied with the system must contain the details of the system supplied. The manufacturers can also provide additional information about the system and conditions of warranty as necessary.
  
- (vi) An operation, instruction and maintenance manual in English should be provided with the solar home system. The following minimum details must be provided in the manual.
  - (a) About Photovoltaics
  - (b) About solar home system-its components and expected performance.
  - © About PV Module
  - (d) About CFL
  - (e) About Battery
  - (f) Clear instruction about mounting of PV modules(s)
    - (a) About electronics
    - (b) About charging and significance of indicators
    - (c) DO's and DON'T's
    - (d) Clear instruction on regular maintenance and trouble shooting of solar home system.

#### 4.3 **SPECIFICATION FOR SOLAR STREET LIGHTING SYSTEM :**

##### 4.3.1 **SOLAR PV MODULES :**

- (i) Solar Module shall consist of redundantly interconnected 36 Photovoltaic cell and the peak power of 74 Wp under STC.
- (ii) SPV modules must be tested and certified by an independent testing laboratory that is accredited with ISO guide 25.
- (iii) Photo electrical conduction efficiency of SPV modules should be greater than 12% modules shall be made of high transitivity glass front surface giving high encapsulation gain and silicon rubber edge sealant for modules protection and mechanical support.

Modules shall perform satisfactorily in relative humidity upto 100% with temperature between 10°C and 90°C and to withstand a gust upto 200 Km/hr. from back side of the modules. Modules shall be of crystalline type employing lamination technology using established polymer and toddler laminate.

- (iv) The rated power output of modules shall not vary more than 5% from the average power rating.
- (v) A minimum warranty of 10 years is available with degradation of power generated not exceeding 10% over the entire 10 years period.
- (vi) The fill factor of modules shall not be less than 0.70.
- (vii) The module should be provided with a junction for provision of external screw terminal connection and with an arrangement for low voltage drop by bypass/blocking diode.
- (viii) Data sheet should be furnished as follows :-

(a)	Module type	:-----
(b)	Module Dimension	:-----
(c)	No of cell & Wattage	:-----
(d)	Solar cell manufacturer type	:-----
(e)	Make of solar module	:-----
(f)	Solar Module frame material	:-----
(g)	Nominal voltage	:-----
(h)	Operating voltage of solar Module	:-----
(i)	Peak power voltage(Vmp) at 50°C	:-----
(j)	Pear power current(Imp) at 50°C	:-----
(k)	Open circuit voltage(Voc) at 50°C	:-----
(l)	Short circuit (Ioc) at 50°C	:-----
(m)	Maximum temperature rise of Solar cell under severe working Conditions over maximum ambient Temperature	:-----
(n)	Operating temperature conditions of modules.	:-----
(o)	Weight of each module	:-----

- x) Photovoltaic modules should have a distinctive marked the name of manufacturer Distinctive Logo, Model No. and serial No.

#### 4.3.2 LAMPS :

- (a) The lamps will be of compact fluorescent (CFL) type either 4 pin/2 pin types with rating of 5 W/9 W. For 4-pin type CFL, a suitable preheating circuit must be provided.

- (ii) The light output from lamps should be around 600+/- 5% lumens for 9 CFL and 900 + /- 5% lumen for 11 W CFL. No blackening or reduction in the lumen output by more than 10% should be observed after 1000 ON/OFF cycle (two minutes on followed by four minutes OFF in on cycle).
- (iii) The lamps should be housed in an assemble suitable for indoor use with a reflector on its back, while fixing assembly, the lamp should be held in a base up configuration.
- (iv) The details specification, make of lamp should be furnished by the firm/supplier.

#### **4.3.3 BATTERY :**

- (i) The battery will be of flooded electrolyte type, positive tubular plat low maintenance lead acid battery of Exide/equivalent make.
- (ii) The battery will have a minimum rating of 12V of 40 Ah at C/10 discharge rate depending on model.
- (iii) 75% of the rated capacity of the battery should be between fully charged and load cut off conditions.
- (iv) A vented metallic box with acid proof corrosion paint for housing the storage battery indoors should be provided.
- (v) Specification details and write up on battery should be furnished.

#### **4.3.4 CHARGE CONTROLLER/ELECTRONICS :**

- (i) The inverter should be quasi sine wave/sine wave type with frequency in the range of 20-30 Khz. Half wave operation not acceptable.
- (ii) The total electronic efficiency should be at least 80%.
- (iii) No blackening or reduction in the lumen output by more than 10% should be observed after 1000 ON/OFF Cycles (two minutes ON followed by four minutes OFF 1-one cycle)
- (iv) The ideal current consumption should not be more than 10 mA.
- (v) Electronics should operate at 12V and should have temperature compensation for proper charging of the battery through out the year.
- (vi) Necessary lengths of wires/cables switches suitable for DC use and fuses should be provided.



- (vii) Adequate protection is to be incorporated under No load conditions i.e. when lamps are removed and the system is switch ON.
- (viii) The system should have protection against battery over charge and deep discharge conditions.
- (ix) Fuses should be provided to protect against short circuit conditions.
- (x) A Blocking diode, should be provided as part of the electronics. To prevent reverse flow of current of current through the PV module(s). In case such a diode is not provided with the solar module(s).

#### 4.3.5 **MECHINCAL HARDWARE :**

- i) A metallic frame structure (with corrosion resistance pint) to be fixed on the pole to hold the SPV module(s). The frame structure should have provision to adjust its angle of inclination to the horizontal between 0 and 45. So that the module(s) can be oriented at the specified till angle.
- ii) The pole should be made of mild steel pipe with a height of 4 metres above the ground level, after grouting and final installation. The pole should have the provision to hold the weather proof lamp housing and the battery box and should painted with a corrosion resistant paint.
- iii) A vented acid proof and corrosion resistant painted metallic box for outdoor use should be provided for housing the battery with proper locking arrangement system.

#### 4.3.6 **OTHER FEATURES :**

- i) The system be provided with 2 LED indicators a green light to indicate charging in progress and a red LED to indicate deep discharge conditions of the battery. The green LED should glow only when the battery is actually being charged.
- ii) There will be a name plate on the system which will give :
  - (a) Name of the manufacturer of Distinctive Logo
  - (b) Serial number
- iv) Components and parts used in solar home systems should confirm to the latest BIS specifications, wherever such specifications are available and applicable.

- iv) The PV module(s) will be warranted for a minimum period of 10 years from the date of supply and the solar home system (including the battery) will be warranted for a period of two years from the date of supply.
- v) The warranty Card to be supplied with the system must contain the details of the system supplied. The manufacturers can also provide additional information about the system and conditions of warranty as necessary.

vi) An operation, instruction and maintenance manual in English should be provided with the solar home system. The following minimum details must be provided in the manual.

- (a) About Photovoltaics
- (b) About solar home system-its components and expected performance.
- © About PV Module
- (d) About CFL
- (e) About Battery
- (f) Clear instruction about mounting of PV modules(s)
- (g) About electronics
- (h) About charging and significance of indicators
- (i) DO's and DON'T's
- (j) Clear instruction on regular maintenance and trouble shooting of solar home system.
- (k) Name and address of the person or service center to be contacted in case of failure or complaint.

4.4 **FORMAT FOR WARRANTY CARD TO BE SUPPLIED WITH EACH SOLAR HOME SYSTEM AND STREET LIGHTING SYSTEM.**

1. Name and address of  
Manufacturer/supplier of the system :
2. Name and address of the purchasing agencies :
3. Date of supply of the system :

4. Details of PV Module(s) supplied in the system  
Make (Name of the Manufacturer) :  
  
Model :  
Serial No.(s) :  
Wattage of the PV Module(s) under STC  
Warranty valid upto :
5. Details of Battery :  
Make (Name of the Manufacturer) :  
Model :  
Batch/Serial No.(s) :  
Rated V & AH capacity at C/20/C/10 rate at 20C :  
Warranty valid upto :
6. Details of Electronics and other BOS items  
  
Make (Name of the Manufacturer) :  
Model :  
Serial No. (s) :  
Warranty valid upto :
7. Designation and address of the person to be  
Contacted for claiming warranty obligations :

4.5 **SPARE PARTS AND REPAIRING TOOLS AND KITS :**

The supplier shall provide spare required during warrantee period free of cost. Beyond warrantee period the supplier shall ensure that spare are made available to MNREDA at reasonable charges. Repairing tools and kits i.e. multimeter, screw driver sets, spanners etc. should be supplied for each plant.

4.6 **PACKAGING, SHIPPING AND MARKING :**

The supplier shall be responsible for assuring that all commodities shipped are properly packed and protected to prevent damage or deterioration during shipment. Packaging and shipping cost shall be borne by the supplier. Customs clearance and all costs and actions associated with import duties taxes and processing of documents within India are borne by the bidder.

4.7 **INSTALLATION AND COMMISSIONING :**

4.7.1 The offer should include provision for installation of the entire system.

4.7.2 The supplier is responsible for the supply of instrumentation required to commission and installation. The plant will be commissioned in the presences of authorized personnel or its nominated representatives. A commissioning protocol should be provided in the offer and an acceptance report will be prepared and signed by all participating parties.

4.8 **AFTER SALES SERVICE :**

The offer should include the terms and conditions for after sales service. The detailed content of the service proposed, and its duration should be clearly stated. Bidders having own/authorized service centers in Shillong or N.E. Region shall be given preference.

4.9 **TRAINING AND AFTER SALES SERVICE :**

Training and after sales service is an important component of supply. The terms and conditions for training and after sales supply and service are to be presented clearly in the bit and the extent and duration of after sales support clearly defined. An explanation of preventative maintenance schedule, plan of operation, scope and implementation of the sale service is to be defined.

4.10 **EXPERIENCE :**

**Past project similar in nature :**

A Comprehensive list of past projects implemented, by the bidder/bidder group company/collaborator in India or abroad, including clients, dates size of projects and any other relevant material should be included in the offer. Companies having experience in execution and operation of similar solar power plants shall be given preference.

4.11 **DOCUMENTATION :**

One set of installation manual/user manual shall be supplied along with the system. Assembly of the complete system shall be shown with computer aided design and drawing form. Step by step maintenance procedures shall be given in the manuals.

**4.12 GUARANTEE PERFORMANCE AGREEMENT :**

An agreement listed system and sub systems of the offer for each component Guarantee has to be signed between supplied and MNREDA along with the performance guarantee as listed in section 3.4.

**4.13 DEVIATION OF THE TENDER :**

In case of deviation the below format should be observes.

**4.13.1 General condition of contract :**

Sl. No.	Specification clause	Deviation by the tender	Justification by the tender.
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**4.13.2 Technical Specification of contract :**

Sl. No.	Specification clause	Deviation by the tender	Justification by the tender.
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**4.14 MARKING OF MNREDA NAME IN SOLAR PHOTOVOLTAIC MODULE :**

It is to be noted that in the distinctive logo of the firm in the Photovoltaic Module it is required to print also the name of the Purchaser marked as “MNREDA”. This is to avoid the frequent theft of modules.

4.15 It is to be noted that were submission of Test Report without providing of Technical Specification as required at section 4.2, 4.3 & 4.4, offer, will stands automatically rejected.

**PART-B**

**TABLE OF CONTENTS**

**5. BIDDING SCHEDULED :**

SL. No.	Description	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
A.	Cost of system				
1.	Cost of SPV home lighting system of 37 Wp 12V, 40 AH along with accessories as per Annexure-I.	1015	No./System		
2.	Cost of SPV Street lighting system of 74 Wp,12V, 74 AH as per Annexure-II.	103	No./System		
	<b>TOTAL OF (A)</b>				
B.	Transportation	66	No.of villages		
C.	Installation and commissioning of system	66	No.of villages		
D	CMC for 3 years	66	No.of villages		
	<b>GRAND TOTAL</b>				

(Rupees -----) only.

Note : Annexure-I & II price of system should be indicated without which bidding scheduled will be treated as incomplete.

**ANNEXURE-I.**

**5.1 DETAILS COST OF 74 WP DOMESTIC HOME LIGHTING SYSTEM.**

SL. No.	Description of item	Quantity	Unit	Rate/Unit (Rs.)	Amount (Rs.)
1.	Supplying of 74 Wp Solar Photovoltaic Module.	1	No.		
2.	Frame of module	1	No.		
3.	Switches	2	Nos.		
4.	Cables etc.	L.S.	No.		
5.	Charges controller/electronics	1	No.		
6.	Battery	1	No.		
7.	Battery box & rock	1	No.		
8.	Luminier & Fixture	2	Nos.		
	Total Ex-work cost of each system				

(Rupees-----  
-----) only.

Seal & Signed of Authorized person  
of the Firm

**ANNEXURE-II.**

**5.2 DETAIL COST OF 74 WP SOLAR STREET LIGHT.**

SL. No.	Description of item	Quantity	Unit	Rate/Unit (Rs.)	Amount (Rs.)
1.	Supplying of 74 Wp Solar Photovoltaic Module.	1	No.		
2.	Frame of Module	1	No.		
3.	Post of frame	1	No.		
4.	Battery	1	No.		
5.	Battery and battery rock	1	No.		
6.	Fixture & Luminier	1	No.		
7.	Controller & Switches	1	No.		
8.	Connecting cable/wire	L.S.	No.		
	Total ex-work cost of system				

(Rupees-----  
-----)only.

Seal & Signed of Authorized person  
of the Firm



# 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\_shg @ bsnl.in ## Website www.mnreda.Gov.in

## **TENDER DOCUMENT**

1. WORK NO. MNREDA/1323/09/Sr.PO/54
2. NAME OF WORK : Electrification of 6 Nos. of Remote Villages in Meghalaya through SPV Domestic Home Lighting System with Integration of SPV Street Lighting System (Under Ministry of Tribal Affairs Programme)
3. DATE OF ISSUE OF TENDER : 30.06.2010 to 16.07.2010
4. DATE OF SUBMISSION OF TENDER : 21.07.2010 upto 13:00 Hours
5. DATE OF OPENING OF TENDER : 21.07.2010 at 14:00 Hours.
6. TENDER ISSUE TO : \_\_\_\_\_  
\_\_\_\_\_ against application vide letter NO. \_\_\_\_\_  
\_\_\_\_\_ dated. \_\_\_\_\_ against payment of Rs.  
5,00/- (Rupees Five hundred) only vide Demand Draft/Bankers Cheque/Cash No. \_\_\_\_\_  
\_\_\_\_\_ dated \_\_\_\_\_ of Bank towards cost of Tender  
Document (Non-refundable).

### PART – A

GENERAL TERMS AND CONDITIONS & SCOPE OF WORK WITH TECHNICAL SPECIFICATION:  
(Page No. 1 – 42)

### PART – B BIDDING SCHEDULED (Page No. 43 – 45)

Issued By : \_\_\_\_\_  
FOR MEMBER SECRETARY CUM DIRECTOR,  
MEGHALAYA NON CONVENTIONAL AND  
RURAL ENERGY DEVELOPMENT AGENCY,  
SHILLONG.

## **PART – A & B**

### **INDEX**

<b>Sl. No.</b>	<b>Items</b>	<b>Page No.</b>
1.	Notice Inviting Tender -	1 - 3
2.	Special Conditions of Contract -	4 - 6
3.	General Terms and Conditions of Contract -	6 - 30
4.	Scope of Work and Technical Specification -	30 - 42
5.	Bidding Scheduled -	43 - 45

# 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\_shg @ bsnl.in ## Website www.mnreda.Gov.in

## NOTICE INVITING TENDER

NO. MNREDA/1323/09/Sr.PO/49 : Sealed Tenders with 120 (one hundred twenty) days validity are invited from any Authorized and Approved MNRE Manufacturer/Supplier for the below mentioned work:

1. Name of Work : Electrification of 6 Nos. of Remote Villages in Meghalaya through SPV Domestic Home Lighting System with Integration of SPV Street Lighting System (Under Ministry of Tribal Affairs Programme)
3. Time of Completion : 180 (One hundred eighty) days.
3. Cost of Tender : Rs. 500/-(Rupees Five hundred) only
4. Date of Issue of Tender : 30<sup>th</sup> June, 2010 to 16<sup>th</sup> July, 2010.
5. Last date of Submission : 21<sup>st</sup> July, 2010 upto 13:00 Hours.
6. Date of Opening of Tender : 21<sup>st</sup> July, at 14:00 Hours

### 7. INSTRUCTION :

- i). Cost of Tender paper or document should be in the form of Banker's Cheque/Demand Draft (Non-refundable) drawn in favour of Member Secretary-Cum Director, Meghalaya Non-Conventional and Rural Energy Development Agency, Shillong.
- ii). While requesting for issuing tender paper/document and application form in plain paper must be stated clearly work NO.
- iii). Tender paper/document will be issued by Courier/Speed post on request but extra payment of Rs. 200/-(Rupees Two hundred) only should be made by Demand Draft in favour of the undersigned towards cost of Speed Post/Courier.

- iv). Local Dealer of any Firm/Manufacturer/Supplier will be issued Tender Paper but on furnish of their Dealership Certificate and tender Paper issued will be in their principle's name.
- v). In the event of postal delayed, the undersigned shall not be held responsible.
- vi). Tender paper/document shall be issued on any working day within the specified date.
- vii) Earnest Money deposit of either 1% or 2% as the case may should be accompany the offer.
- viii). Tender are to see themselves that for each Work No. nature of work are qualified or not the issuing of Tender paper by the office to those non qualified firm/Supplier/Manufacturer are not the responsibility of this office.
- ix). In case the opening date is declared as holiday, tender shall be opened in the next working day at the same time and hour Website.
- x) Tenders can also submitted Tender downloading from our website but cost of Tender Document has to be furnished before casting of Tender.

The undersigned reserves the right not to accept the lowest tenderer and may reject any or all the tenderers without assigning any reasons whatsoever.

Sd/-  
Member Secretary-Cum Director,  
Meghalaya Non-Conventional and  
Rural Energy Development Agency,  
Shillong.

Memo NO. MNREDA/1320/09/Sr.PO/

Dated Shillong, the

Copy to:

1. The Principal Secretary to the Govt. of Meghalaya,  
Power Department.
2. Shri Sudhir Mohan,  
Adviser (RVE) Division  
Ministry of New and Renewable Energy,  
Block No. 14, C.G.O. Complex,  
Lodi Road, New Delhi-110003.
3. M/s Impact INC,  
Glorys Plaza, 2<sup>nd</sup> Floor,  
Police Bazar, Shillong.

4. The Directorate of Information & Public Relation Department Meghalaya, Shillong.
5. The State Public Information Officer, National Information Centre, Meghalaya Shillong.
6. All Registered & Recognised, MNRE Manufacturer & Supplier.
7. Notice Board.

Sd/-  
Member Secretary Cum Director,  
Meghalaya Non Conventional and  
Rural Energy Development Agency,  
Shillong.

## 2. SPECIAL CONDITIONS OF CONTRACT:

### 1. Details of Villages, Locations and Systems requirements:

Sl. No.	Name of Village	Block	District	Systems Requirements	
				Solar Domestic Home Lighting Systems	SPV Street Lighting System
1.	Taidang	Rongara	South Garo Hills	48	10
2.	Jading	Pynursla	East Khasi hills	14	02
3.	Pakria	Pynursla	East Khasi Hills	40	07
4.	Lyntidar	Pynursla	East Khasi Hills	07	-
5.	Amphreng	Umsning	Ri-Bhoi District	32	06
6.	Gunpati	Umling	Ri-Bhoi, District	65	15
	Total:			206	40

2.1.1 The Villages as indicated above at 2.1 may be liable to be changed but SPV Domestic Home Lighting System is fixed and intimation in this respect will be intimated prior to dispatching of equipments from factory

### 2.2 TENDER PROCESS:

2.2.1 Tenderer are to furnish their offer by clearly marked NIT No. and date of opening.

2.2.2 The offer should contain only design of plant offer as per Technical Specification or requirement of Sec. 4 and related paper to Technical support. The Test Report domestic Home Lighting System and SPV Street Lighting System issued by any MNRE Authorization Test Centre issue after April, 2005 should be enclosed and attested by Authorized persons, VAT Registration, VAT Clearance Certificate upto 2009-2010, EMD, Work Experienced or any other supporting paper along with price quoted in the format as in NIT.

- 2.2.3 Commercial Terms and Conditions specifically indicating deviations to the terms and conditions stipulated in detailed Tender papers including payment terms ect.
- 2.2.4 Basis price quoted – The price quoted should be FIRM and as per the format provided in the tender Document. Price breakup of various components must be clearly indicated in the format, failing to comply to the above will result in cancellation or rejection of the Tender.
- 2.2.5 Any other particular information, which are required to be furnished as per detailed Tender papers but which have not been specifically indicated.
- 2.2.6 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 later shall indicated.
- 2.2.7 Date of opening of Financial Bid shall be intimated individually to those Firm who is qualified for Technical offer.
- 2.2.8 The Price Bid/offer of all other who are not qualified for Technical Bid shall be returned unopened to such parties under acknowledgement. For offer who qualify for Technical Bid due information shall be given through either Phone or Fax.
- 2.2.9 E.M.D. of either 1% or 2% on tender value subjected in the form of Bank Guarantee/Call deposit/FDR from any Nationalized or Scheduled Bank of India duly pledged in favour of Director, MNREDA, Shillong should be furnished without which Tenders will be rejected
- 2.2.10 All Tender paper should be seal and signed by an authorized representative of the Firm.
- 2.2.11 Supplier who are not manufacturing modules are to produce a letter from the manufacturer of Modules of Supplying of the same in case work is awarded to the.
- 2.2.12 The Bidder should produce a Trading License from the concern authority before starting of work.
- 2.2.13 A separate Agreement for both the work and the Annual/comprehensive maintenance contract has to be entered prepared by the Purchaser on a stamp paper duly signed by the Authorized person of the firm and the Purchaser.

- 2.2.14 The System quantity as indicated above are fixed but the quantity Model-II may be vary and confirm on placing of work order.
- 2.2.15 Each and every papers submitted for should be duly attested by the Government Official not below the rank of a Magistrate. All other papers issued by the Agency should be duly seal and signed by the authorized person of the Firm.
- 2.2.16 The offer should contains the following:
- (i) Tender paper (Part – ‘A’) as issued by the Agency duly signed and seal by the Authorized persons of the Firm.
  - (ii) Test report on Home System Model-II and SPV Street Lighting Systems issued from Proper Authority with effect from April, 2005 onwards
  - (iii) Technical Specification
  - (iv) Experience in Similar kind of works.
  - (v) Latest VAT and clearance Certificate upto 2009-2010
  - (vi) Any deviation with Justification thereof.
  - (vii) EMD
  - (viii) Price can be quoted on plain paper but format as given should be strictly adhere.

### 3. GENERAL TERMS AND CONDITIONS OF CONTRACT:

#### 3.1 PREFIX TO THE TERMS AND CONDITIONS OF CONTRACT:

In the contract the following expression shall, unless the context otherwise requires have the meaning thereby respectively assigned to them.

- 3.1.34 “**The Government**” shall mean the Government of Meghalaya or the Government of India as may be the case.
- 3.1.35 “**MNREDA**” means Meghalaya Non Conventional and Rural Energy development Agency, Shillong.
- 3.1.36 “**Contract**” : Contract means the document forming the tender, acceptance thereof and the formal agreement executed between the MNREDA and the contractor, together with documents referred to therein otherwise it shall mean the Notice Inviting Tender, information and instructions to tender. Tender (including the warranty “Schedule of quantities and prices” and other schedule attached thereto) General conditions of contract, special conditions, if any, specifications, designs, drawing and letter of award thereof.



- 3.1.37 “**Contract Price**” : Means the price payable to the Contractor under the contract for full and proper performance of its contractual obligations.
- 3.1.38 **The “Contract”** shall mean the person or corporation of firm whose tender for the work has been accepted and his executors, administration and assigns.
- 3.1.39 “**Works**” Means the materials to be supplied and the work to be executed as defined and set out in the specifications and includes all extra work, addition, deletions, substitutions and variations ordered by the Engineer-in-charge in accordance with the provisions of the contract.
- 3.1.40 “**Engineer-in-charge**” : Means the Engineering Officer appointed by MNREDA to sign to cause to sign the contract agreement on behalf of the MNREDA and the Engineering Officer appointed by the MNREDA or its duly authorized representative to direct supervise and be in-charge of the works for the purpose of the contract.
- 3.1.41 “**The Consultant**” shall mean the firm or person as may be duly appointed by the Purchaser to act as Consulting Engineer for the purpose of work covered in the contract.
- 3.1.42 “**Specification**” : Means collectively all the terms and stipulations contained in this document including the conditions of contract, technical provisions and attachments thereto and list of corrections and amendments.
- 3.1.43 “**Site**” : Means the land on under in or through which the works are to be executed or carried out and such land as may be agreed upon between the corporation and the contractor as being reasonable and necessary for the carrying out of the works.
- 3.1.44 “**Tests on Completion**” shall mean all such tests as are prescribed by the specification to be made by the contractor to the satisfaction of the purchaser before the plant and equipment are taken over by the purchaser and this also includes those tests but specifically mentioned in the specification but required under various BIS codes and relevant Electricity Acts and Rules.
- 3.1.45 “**Commissioning**” shall mean the satisfactory, continuous and uninterrupted operation of the equipment/work as specified after all necessary initial tests, checks and adjustments required at site for a period of at least 15 days to the satisfaction of Engineer-in-charge.
- 3.1.46 “**Commercial Use**” shall means that use of the work which the contract contemplated or which it is commercially capable of.
- 3.1.47 “**Approval**” shall means the written approval of the Engineer-in-charge and of the statutory authorities, wherever such authorities are specified by any codes or otherwise.

- 3.1.48 “**Drawings**” : Means collectively all the accompanying general drawing as well as all detailed drawings, which my used from time to time.
- 3.1.49 “**Tender Drawings** : Refers to the drawings made part of the tender documents.
- 3.1.50 “**Details Drawings** “ To be furnished by the contractor for execution of the work and they will from part of the contractor.
- 3.1.51 “**Labour**” : Means all categories of labour engaged by the contractor, his sub-contractor and his piece workers for work in connection with the execution of the worked covered by the specification. All these labourers will be deemed to be employed by the contractor.
- 3.1.52 “**Fiscal Year** “ : Means year beginning on the first day of April and ending on 31<sup>st</sup> March in the succeeding year.
- 3.1.53 “**Day**” : Means calendar day beginning and ending midnight.
- 3.1.54 “**Month or Calendar month**” : Means not only the period from the first of a particular month but also any period between a date in a particular month and the date of previous to the corresponding date in subsequent month unless specifically stated otherwise.
- 3.1.55 “**Week**” : Means seven consecutive calendar days.
- 3.1.56 “**MNREDA Stores** “: Means the stores owned by the MNREDA.
- 3.1.57 “**Security Deposit** “ : Means all deposits whether in Government Securities. Fixed Deposit receipts or Bank Guarantee from a Nationalized Bank of India, amount deducted from interim payments or in any other from pledged to MNREDA for due performance of the contract and shall be adjusted in case of compensations, or penalties and which may be stand either in part or whole as the situation demands.
- 3.1.58 “**Urgent Works** “: Means any urgent measures, which in opinion of Engineer-in-charge, become necessary at the time of execution and /or during the progress of work to obviate any risk of damage necessary for security or for any other/reason the Engineer-in-charge may deem expedient.

- 3.1.59 “**Project**” refers to Electrification of various villages with grid quality SPV System.
- 3.1.60 “**Manufacturer/Supplier**” refers to the party proposing to Design and Construct as specified complete or in part
- 3.1.61 “**Plant Equipment Stores**” : Means and include plant and materials to be provided under the contract.
- 3.1.62 “**Delivery of Plant Equipment**” shall be deemed to take plants equipment in accordance with the terms of the contract complete in all respect after approval by the Director MNREDA on report of Engineer-in-charge.
- 3.1.63 “**Letter of Intent**” Means the letter from the Director, MNREDA conveying his acceptance of the tender, subject to such reservation as may have been stated therein.
- 3.1.64 “**Sub-Contractors**” refers to party or parties having contract with the contractor and to whom any part of the contract has been sublet by the contractor with the consent in writing of the Engineer-in-charge.
- 3.1.65 “**Tone/M.T.**” Where used in these specifications shall mean metric tonne of 1000 Kg.
- 3.1.66 The terms and expressions not herein defined shall have the same meaning as assigned to them in the Indian Sale of Goods Act. 1977 or any such Act as the case may be.
- 3.2 **CONTRACTOR TO INFORM HIMSELF FULLY:**
- 3.2.1 The Contractor shall be deemed to have carefully examined the general conditions, specifications 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.

- 3.2.7 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 Engineer-in-charge in writing in order to remove such doubts.
- 3.2.8 Details of past experience during last 5 (five) year in the field of manufacture, Supply, Erection, testing and Commissioning of SPV System & Power Plants already executed & Commissioning especially in the North Eastern Region.
- 3.2.9 Documentary evidence in support of financial soundness of the Tendered for taking up the work.
- 3.2.10 A bar PERT Chart indicating completion Schedule for various items involved in the work within the stipulated completion period.
- 3.2.11 A Firm should be willing to sign a comprehensive Maintenance contract for 5 (five) years are as modified by MNES in force during deciding of contract.

**3.3 AGREEMENT/ PURCHASE ORDER:**

- 3.3.1 After issue of Letter of Intent the Purchaser shall prepare the Agreement on stamped paper, as per the format given by MNREDA. The NIT, Schedule of items & rates, Terms and Conditions of contract and special terms and conditions and all important correspondences regarding finalization of contract shall from part of the agreement.
- 3.3.3 The expenses for completion and stamping the agreement shall be borne by the purchaser and the contractor shall be furnished a certified copy of the agreement free of cost.

**3.4 PERFORMANCE GUARANTEE:**

- 3.4.1 Within 30 days from the date of Contract Agreement the Contractor shall furnish performance guarantee for the due and faithful performance of the agreement/Letter of Intent along with other terms and conditions agree to. In any one of the following forms:

- j) A Bank Guarantee from a Nationalized/Schedules Bank for an amount equal to 30% (thirty percent) of the contract value by way of guarantee for due and faithful performance of the agreement and other terms and conditions agreed to:
- ii) A Banker's Cheque or a demand Draft for the Guarantee amount as specified above.

3.4.4 Such agreement shall be valid and binding, notwithstanding such variations, alterations or agreed under these general conditions during the entire warranty period as per clause No. 3.4 of these general conditions the contractor shall at his own cost, get the validity period of Bank Guarantee, furnished by him extended from time to time till the completion of the purchaser fifteen days before the expiry of the original Bank Guarantee or any extension thereof. In case the extended revised Bank Guarantee is not received by the purchaser within the specified period the purchaser, entirely at his discretion, shall be at liberty to cash the aforesaid Bank Guarantee.

3.4.5 On due completion of work in all respect and on expiry of the maintenance or warranty period as per Clause No. 3.4 of these general conditions, the Bank Guarantee/amount paid through bank Guarantee or Banker's Cheque under Clause 3.4.2 will be returned to the contractor without any interest on representation of an absolute "NO DEMAND

CERTIFICATE" from purchaser and up on return, in good condition, of any specification, drawings, Technical literature, samples, tools and tackles or any property belonging to the purchaser which may have issued to the contractor Provided always that MNREDA shall be entitled to retain, set off, deduct or adjust any claim against the contractor from the money deposited with or becoming payable to MNREDA.

### 3.5 **CONTRACT DRAWINGS:**

3.5.1 The Tendered shall submit with the Tender, the drawings enumerated below and in various other sections of the specifications:

- (i) Write up on Model – II, SPV Domestic Home Lighting System along with detail drawings & Block Diagram of System.
- (ii) Write up & drawing of SPV Street Lighting Systems along with installation details of System.

- 3.6.2 These drawings shall show sufficient overall dimensions, clearances and space requirements of all apparatus to be furnished, to enable the Purchaser to determine the design and layout of the installation.
- 3.6.3 The contractor within 30(thirty) days after signing of contract, shall submit in triplicate to the Director, MNREDA for his approval drawings of the General Arrangement and such other detailed drawings as otherwise specified elsewhere in the specification or otherwise reasonable necessary.
- 3.6.4 Within 30 days of receipt of such drawings, the Director or Engineer-in-charge shall signify his approval or otherwise of the same, and in the event of disapproving the drawing the contractor shall submit further drawings for approval.
- 3.6.5 No extension of time shall be allowed on account of the time consumed in submission and examination of defective drawings and resubmission of the corrected drawings.
- 3.6.6 With a reasonable period from the date of receipt of approval, the contractor shall submit 2 sets of drawings of equipment layout and civil work layout of SPV lighting system.
- 3.6.7 These drawings, when so signed, shall become the property of the purchaser. No departure from the drawings in any way will be allowed in execution except with written permission of the Director, MNREDA.
- 3.6.8 The Contractor, if required by the Director/Engineer-in-charge shall supply additional copies of any drawing without charging any extra-cost, which may reasonable be required for the purpose of the contract.
- 3.6.9 Any Tender drawings, technical data or correspondence which from the basis of an order or contract, aforesaid, or which may be furnished by the contractor for the Purchaser's approval or information as provided under the said order or contract shall be in English and if it is in any other language a complete, translation in English shall be duly furnished.
- 3.6.10 The contractor shall be responsible for and shall pay for any alternations of the work due to any discrepancies, errors and omissions in the drawings or other particulars supplied by him whether such drawings or particulars have been approved by the purchaser or not, provided that such discrepancies errors or omission are due inaccurate information or particulars

furnished to contractor by the Purchaser. Any alterations in the work necessitated by reason of such inaccurate information of particulars shall be paid for by the Purchaser.

**3.7 SUBLETTING OF CONTRACT:**

The Contractor shall not without the prior consent in writing of the Purchaser, assign or sublet or transfer his contract, or a substantial part thereof other than raw materials or for any part of the work of which makers are named in the contract provided that any such consent shall nor relieve the Contractor from any obligation duty or responsibility under the contract.

**3.7 PATENT RIGHTS:**

In the event of any claim or demand being made or action being brought against the purchaser for infringement or alleged infringement of patent rights in respect of any machine, plant, work or things used or supplied by the contractor in respect of any method of using or working by the Purchaser, such machine plant work or thing, the contractor shall indemnify the Purchaser from and against such claims whatsoever or demand and costs and expenses arising

from or incurred by reasons of such claim or demand. The Purchaser shall notify the Contractor immediately on receipt of any claim and that the contractor shall be at liberty. If he so desires with the assistance of the Purchaser, if required, but at the contractor's own expense

to conduct all negotiations for the settlement of the same/or any litigation that may arise there from provided that no such machine, plant, work or things shall be used by the Purchaser for any purpose in any manner other than that for which have been supplied by the contractor and specified under the contract.

**3.8 MATERIALS AND WORKMANSHIP:**

3.13.1 All materials shall be of the best quality and workmanship capable of satisfactory operation under the operating and climate conditions as may be specified. Unless otherwise specified, they shall conform in all respect to the latest edition of the relevant BIS specification where Indian specifications apply.

- 3.13.2 All equipment and materials shall be supplied by the Contractor at site. The Contractor shall arrange for transportation, loading, unloading and safe storage of materials at site.
- 3.13.3 The Contractor shall offer equipment manufactured in accordance with other well recognized standards, but shall in that case, supply a copy in English of the Standard Specification adopted by them and shall clearly mention in what respect such standard specified differing from Indian Standard specifications, where Indian Standard Specifications exists.
- 3.13.4 The Plant equipment and materials offered by the contractor should comply with one consistent set of Standards only as far as possible.

**3.14 INTER-CHANGEABILITY:**

All the parts shall be made accurately to Standard gauges so as to facilitate replacement and repair. All corresponding parts of similar apparatus shall be inter-changeable.

**3.15 PACKING AND MARKING:**

- 3.15.1 The Contractor shall be responsible for security protecting and packing the plant & equipment as per prescribed standards in force to withstand the journey and ensuring safety of materials and also arrival of materials at destination in original conditions and good for contemplated

use. Packing case size & weight shall take into consideration the remoteness of the goods final destination and absence of heavy material handling facilities at all points in transit.

Each bundle or package shall have the following marking on it:

- (a) The name & address of the consignee.
- (b) Destination
- © Relevant marks, reference number etc. for identification.

- 3.15.2 Packing lists of materials shall be provided in each-package to facilitate checking up of the contents at the destination.



**3.16 POWER TO VARY/OMIT WORKS:**

- 3.16.1 No alternations, amendments, omissions, additions, subtractions or variation of the work (hereinafter referred to as 'variation') under the contract shall be made by the contractor except as directed by the Engineer in-charge. The Engineer-in-charge shall have full power, subject to provisions hereinafter contained from time to time during execution of the contract by notice in writing to instruct the contractor to make such variations and be bound by the same conditions though the said variations occurred in the contract.
- 3.16.2 If any suggested variations would in his opinion of the contractor if carried out, prevent him from fulfilling any of his obligations or guarantees, under the contract, he shall notify the Engineer-in-charge thereof in writing, and the Engineer-in-charge shall decide forthwith whether or not the same shall be carried out and if Engineer-in-charge confirms his instruction, the contractor shall carryout the work as per instruction.
- 3.16.3 The differences in cost if any occasioned by such variations shall be added to or deducted from the contract price, as the case may be.
- 3.16.4 In event of Engineer-in-Charge requiring any variations, reasonable and proper notice shall be given to the contractor as well as to enable him to make arrangements accordingly and in cases where goods or materials are already prepared procured, or any designs, drawings or patterns made or work done that require to be altered a reasonable sum in respect thereof shall be allowed by the Engineer-in-Charge.
- 3.16.5 In every cases in which the contractor shall receive instructions from the Engineer-in-charge for carrying out any work, which either then or later, will in the opinion of the contractor involve a claim for additional payment, the contractor shall as soon as reasonable possible after the receipt of such instructions inform in writing the Engineer-in-Charge of such claim for additional.

**3.17 NEGLIGENCE:**

3.17.1 If the contractor shall neglect to manufacture or supply the plant and equipment with due diligence and expeditious or shall refuse or neglect to comply with any reasonable order given to him in writing by the Engineer-in-Charge or shall contravene any provisions of the contract, the purchaser may give fifteen days notice in writing to the contractor to make good the failure, neglect or contravention complained of any if the contractor shall fail to comply with the notice within reasonable time from the date of serving thereof in the event of failure, neglect or contravention capable of being made good within that time, then in such case if the Purchaser shall think fit, it shall be lawful for him to take the manufacture or supply of plant wholly or in part, out of the contractor's hand and give it to another person on contract at a reasonable price and the Purchaser shall be entitled to retain and supply and balance which may be otherwise due on the contract by him to the contractor or such part thereof as may be necessary, to the payment of the cost of manufacture or supply such plant as aforesaid.

3.12.2 If the cost of executing the work as aforesaid shall exceed the balance due to the contractor and the contractor fails to make good such deficiency, the Purchaser shall take action in the manner it may consider deem fit in terms of the contract.

**3.18 COMPLIANCE WITH REGULATIONS:**

The Contractor shall comply with all applicable laws of ordinance, codes, approved standards, rule and regulations and shall procure all necessary Municipal, Panchayat and Government permits & License etc. at this own cost. The contract shall leave the Purchaser and the Engineer-in-charge harmless as a result of any infractions thereof.

**3.14 DEATH, INSOLVENCY AND BREACH OF CONTRACT :**

The Purchaser may at anytime by notice in writing summarily determine the Contract without compensation to the contractor in any of the following events.

3.14.4 If the contractor being an individual or if a firm, any partner thereof shall at anytime, be adjusted insolvent of shall have an receiving order or order from administration of his estate made against him or shall taken any proceeding for compensation under any insolvency.

Act for the time being in force or make any conveyance or assignment with his creditors or suspect payment or if the firm be dissolved under partnership Act. Or

3.14.5 If the contractor being a Company is wound up voluntarily or by the order of a court or a Receiver. Liquidator or Manager on behalf of the Debanture holder is appointed or circumstances have been arisen which entitle the Court of debenture holder to appoint a Receiver, Liquidator of Manager.

3.14.6 If the contractor commits any breach of the contract not herein specifically provided for, provided always that such determination shall not prejudice any right or action or remedy which shall have accrued or shall accrue thereafter to the Purchaser and provided also that the contractor shall be liable to pay to the Purchaser. The contractor shall under no circumstances be entitled to pay again or repurchase.

**3.15 DATE OF COMPLETION :**

The contractor shall provide full programme of the supply in detail and delivery schedule thereto. Strict adherence and guaranteed delivery schedule mentioned in contract conditions shall be essence of the contract and delivery must be maintained. The work must be completed within 6(six) months from the date of signing of contract.

**3.16 DELAY IN EXECUTION OR FAILURE TO SUPPLY :**

3.16.1 If the work is delayed on account of :

- (i) Increase in quantity of work.
- (ii) Suspension of work as ordered by the MNREDA
- (v) Force Majeure conditions
- (vi) Any other causes which in absolute discretion of the Engineer-in-Charge are beyond the contractor's control.

The contractor shall appeal to MNREDA in the form of a written application before expiry of the contract period bringing out the causes responsible for the delay for granting suitable time extension.

3.16.2 MNREDA if satisfied that the delay is not attributed to the fault of the contractor, may grant suitable time extension. However, if the contractor is found responsible for any delay completion of the work, formal time extension shall also be granted by the MNREDA but reserving its right to recover a sum towards liquidated damage, for late completion as per clause No.3.17 of this contract.

3.16.4 However, if the contractor fails to deliver the plant or fails to start the work within specified time frame after the receipt of work order or leave the work site after partial execution of the work, MNREDA may without prejudice to the right of the purchaser to recover damages for breach of trust of the contract may impose the following penalties.

3.17 **LIQUIDATE DAMAGE :**

Scheduled date of completion shall be treated as the essence of the contract liquidated damage shall be imposed at the rate of 0.5% of the unexecuted value per week of delay up to a maximum of 2.5% at the sole discretion of the Engineer-in-charge. If there is any valid and acceptable reason for delayed execution supported with details of hindrances as per hindrance register, the Engineer-in-charge may, at his discretion consider to lower down the penalty rate or even waive off the penalty on having written application from the contractor.

3.18 **RISK PURCHASE :**

Purchaser or authorize the purchase elsewhere without notice to the contractor, on the account and at the risk of the contractor of the plant so delivered or orders plant/equipment of similar description (opinion of the purchaser shall be final) without canceling the contract.

3.19 **BREACH & CANCELLATION OF THE CONTRACT :**

3.19.1 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 absolutely determine. The decision of MNREDA in this regard shall be final and binding.

3.19.3 The purchaser may cancel the contract or a portion thereof and if so purchase or authorized purchase of the plant/equipment not so delivered or order plant equipment of similar description (opinion of the purchaser shall be final) at the risk and cost of the contractor. If the contractor had defaulted in the performance of the original contract, the purchaser shall have the right to ignore his tender for risk purchase even though lowest.

3.20 **FORCE MAJEURE CONDITIONS :**

3.20.1 In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under this agreement, relative, obligation of the party affected by such majeure shall be treated as suspended during which the force majeure clause last.

3.20.2 The term "Force Majeure" shall have herein mean riots (other than among the contractor's employee), civil commotion, war (whether declared or not), invasion, act of foreign enemies hostilities, civil war, rebellion, revolution, insurrection, military coup to usurp power, damage from aircraft, nuclear fission, acts of god such as earthquake (above 7.0 magnitude on richer scales), lightning, unprecedented floods, fires, landslides, not caused by contractors negligence and other causes which the contractor has no control and accepted as such by the Engineer-in-charge whose decision shall be final and binding.

3.20.3 Up on occurrence of such cause and up on its termination, the party alleging that it has been rendered unable as aforesaid thereby shall notify that the other party in writing by registered notice within 72(seventy two) hours of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of its claim.

3.20.5 Time for performance of the relative obligation suspended by the force majeure shall stand extended by the period for which such clauses lasts.

3.20.5 If works are suspended by force majeure conditions lasting for more than four months the Purchaser shall have the option of canceling this contract in whole or part thereof at its discretion. However, the purchaser shall make payment to the contractor the amount for which the materials has been dispatched from the factory and or shall be ready for dispatch within the next thirty day of commencement of Force Majeure condtions.

3.20.6 Contractor shall not claim or compensation for “Force Majeure conditions” and shall take appropriate steps to insure mean and materials utilized by him under the contract well in time.

3.21 **PROGRESS REPORT OF WORK :**

The Contractor shall submit weekly/monthly progress report on execution of works conforming to bar chart in case of any slippage(s) or delay in execution of work reasons for such delay along with details of hindrances will be submitted by the contractor along with modified Bar Chart (if required).

3.22 **INSURANCE :**

(a) **For materials**

The contractor shall arrange for transit and erection insurance of the materials at his own cost. MNREDA shall, in no case be held responsible for any lose, damage or theft of materials/equipment so long the plant continue to remain under.

(b) **For workmen**

The contractor should arrange for providing insurance cover to his workmen under Workmen’s Compensation Act of similar Rules Acts as applicable during the presidency of the contract for covering risk against any mishap to his workmen. MNREDA will not be responsible for any such loss or mishap.

3.23 **STATUTORY ACTS, RULES AND STANDARDS :**

The work shall be executed in conformity with the relevant standard or Bureau of Indian Specification (or equivalent International Standard). Indian Electricity Rules, 1956 (as amended upto date), Indian Electricity Act and relevant Rules in vogue at the time of execution.

3.24 **TOOLS & TACKLES :**

The contractor shall provide all tools and tackles conforming to relevant BIS safety and technical standard for proper execution of work. MNREDA shall in no way, be responsible for supply of any tools and tackles for implementation of the work.

3.25 **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.

3.26 **STOPPAGE OR WORK :**

MNREDA shall not be responsible for any damage or loss caused due to “force majeure” conditions. The contractor should make provision for adequate insurance cover against such loss or damages MNREDA shall not be responsible and not liable to pay any compensation due to stoppage of work as a reaction from local public due to any undue action on the part of the contractor causing annoyance to local people.

3.27 **HINDRANCE REGISTER :**

The contractor may also maintain a hindrance register where reasons for delay may be recorded from time to time and at the time of occurrence of the hindrance and get it duly certified by the Engineer-in-charge or his authorized representative.

3.28 **RESPONSIBILITY OF THE CONTRACTOR :**

The contractor shall guarantee and be entirely responsible for the execution of the contract in accordance with the specification, schedules and appendices. He shall further guarantee and be responsible for the quality and workmanship of all materials and completed works, correct designs and drawings, correct delivery of materials, erection, testing and commissioning, within the guaranteed completion and warranty period of 5(five) years from the date of commissioning on completion of commissioning a separate agreement shall have to be signed in their respect for comprehensive maintenance contract.

**3.29 RIGHT OF MNREDA TO MAKE CHANGE(S) IN DESIGN :**

MNREDA shall have the right to require the contractor to make any change in the design which may be necessary in the opinion of the Engineer-in-charge to make the plant and materials conform to the provisions and contents of the specification without extra cost to the purchaser.

**3.30 DRAWINGS AND MANUALS :**

All necessary erection/construction, drawings, erection, testing and commissioning manuals etc. shall be supplied by the contractor as and when required. Three sets of drawings, manuals etc. shall be submitted by the contractor on completion of the work.

**3.31 INSPECTION AND TESTING :**

3.31.1 The Director and his duly authorized representative shall have, at all reasonable time access to the contractor's premises, and shall have the power, at all reasonable times, to inspect and examine the materials and workmanship of plant during its manufacture shop assembly the test and if part of the plant is being manufactured in another premise the contractor shall obtained from the Engineer-in-charge or his duly authorized representative, necessary permission to inspect it as if the plant was manufactured at contractor's own premises.

3.31.2 The Engineer-in-charge shall, on giving seven day's notice in writing to the contractor, setting out any grounds of objections which he may have in respect of the work, be at liberty to reject all or any plant or workmanship connected with such work, which in his opinion defective for any reason whatsoever, provided that, if such notice be not set to the contractor within reasonable time after the grounds on which notice is based have come to reject the said plant or workmanship on such grounds. Unless specifically provided otherwise, all tests shall be made at the contractor's works before shipment.

3.31.8 The contractors shall, if required, give the Engineer notice of any plant being ready for testing, and the Engineer or his authorized representative, if so desired, shall on giving twenty four hour's previous notice in writing to the contractor attend at the contractor's premises within 15 days of the date on which the material is notified as being ready failing which or alternatively if the purchaser at its own discretion waives the inspection and testing, the



contractor may proceed with the tests which shall be deemed to have been made in the Engineer's presence, and he shall forthwith three sets of duly certified copies of test results and certificates to the Engineer-in-charge for approval of the purchaser. The equipment shall be dispatched only after the approval of the test certificates by the purchaser in writing.

3.31.9 In all cases where the contract provides for tests whether the premises of the contractor or any sub-contractor, the contractor except where otherwise specified, shall provide free of charge such labour, materials, electricity, fuel, water, stores, apparatus and instruments as may reasonably be demanded to carry out efficiently such tests of the plant in accordance with the contract, and shall give facilities to the Engineer-in-charge or his authorized representative to accomplish such testing.

3.31.10 If the inspection is done through an independent authority, at the option of the purchaser, the inspection fee, if any shall be paid by the purchaser.

3.31.11 When the inspection and the tests have been satisfactorily completed at the contractor's works, the Engineer shall issue a certificate to that effect.

3.31.12 Neither the waiving of inspection nor acceptance after inspection by the purchaser shall, in any way, relieve the contractor of the responsibility of supplying the plant and equipment strictly in accordance with specification and drawings etc.

### **3.32 DELIVERY OF SYSTEM :**

3.32.4 The contractor shall deliver the plant 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.

3.32.5 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 triplicate and packing account of all stores delivered or dispatch by him.

3.32.6 In case of any occurrence of loss or damage in transit up to destinations, 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.

**3.33 ENGINEER'S DECISION :**

In respect of all matters which are left to the decision of the Engineer-in-charge, including the granting or withholding certificates, the Engineer shall if required to do so by the contractor, give in writing a decision there on and his reason for such decision. If the decision is not accepted by the contractor the matter, will, at the request of the contractor be referred to arbitration under the provision for arbitration hereinafter contained, but, subject to the right of reference to arbitration, such decision shall be final and binding on the contractors and the purchaser.

**3.34 LIABILITIES FOR ACCIDENTS AND DAMAGES DURING TRANSIT :**

The contractor shall be responsible for loss damages or depreciation to goods or plant/equipment up to delivery at site.

**3.35 DEDUCTION FROM CONTRACT PRICE :**

3.35.4 All costs, claims, damages or expenses which the Purchaser may have for, which under the contractor is liable, may be deducted by the Purchaser from "Performance Guarantee" or from any money due or which become due by him to the contractor under this contract.

3.35.5 Any sum of money due and payable to the contractor (including Performance Guarantee returnable to him) under this contract may be appropriated by the purchaser.

3.35.6 It is an agreed term of the contract that the sum of money withheld or obtained under this clause by the purchaser will be kept withheld or retained as such by the purchaser or till this claim arising out of in the same contract is either mutually settled or determined by the arbitrator, or by competent court, as the case may be, and that the contractor shall have no claim for interest or damages whatsoever on this account or any other account in respect of the sum of money withheld or retained under this clause and duly notified as such to the contractor.

**3.36 TERMS OF PAYMENT :**

Subject to any deduction which the purchaser may be authorized to make under this contract, and or to any additions or deductions provided for in this contract, the bidders shall be entitled to the following payment terms.

- 3.36.8 All payments shall be made Indian Rupees, unless otherwise specified in the contract.
- 3.36.9 Mobilization Advance : The contractor shall be paid 30% (thirty percent) of contract value as mobilization advance against a Bank Guarantee for equivalent amount from a nationalized bank Pro-rata recoveries of this advanced amount shall be made from subsequent running bills.
- 3.36.10 40% (forty percent) of the contract value of the plant/equipment shall be paid against receipt of materials at site in good conditions. Running payment equivalent to 40% of the price plant/equipment supplied shall be made.
- 3.36.11 20% (twenty percent) of the contract value of the plant/equipment shall be paid on complete installation and commissioning.
- 3.36.12 Balance 10% (ten percent) to be paid at the end of five years of warranty period or against submission of equivalent Bank Guarantee valid for a period of two years from the date of commissioning.
- 3.36.13 The Annual /comprehensive contract payment shall be made on percentage of 30%,30% and 40% at the end of 3<sup>rd</sup>,4<sup>rd</sup> and 5<sup>th</sup> year basis.
- 3.36.14 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 form the contractor from his/its assets/amount due against performance Guarantee.

3.37 **TESTS ON COMPLETION :**

Whenever possible, all shop tests shall be carried out before shipment. It will be necessary for the final tests as to performance and guarantees to be held over until the plant is erected at site, they shall be carried out the presence of contractor's representative within reasonable time of completion of erection. If the results of these tests are not within reasonable time of completion of erection. If the results of these tests are not within the margin specified. The tests shall, if required be repeated after the plant is ready for re-tests, and the contractor shall bear all reasonable expenses to which he may be put such tests.

**3.38 REJECTION OF DEFECTIVE PLANTS :**

3.38.1 If the completed plant, or any portion thereof, before it is taken over found to be defective or fail to fulfill the requirements of its contract, the Engineer shall give to the contractor notice stating the particulars of such defect good, or alter the same to make it comply with the requirements of the contract. If the contractor fails to do so within a reasonable time, the purchaser may reject and replace, at the cost of contractor, the whole or any portion of the plant, as the requirement of the contract. Such replacement shall be carried out by the purchaser within a reasonable time and a reasonable price and where possible to the same specifications under competitive conditions. In case of such replacement by the purchaser, the contractor shall be liable to pay to the purchaser the extra cost, if any of such replacement, be delivered and /or erected as provided for in the contract agreement. The extra cost of may be ascertained as the difference between the price paid by the purchaser as also any sum paid by the purchaser does not so replace the defective plant within a reasonable time, the contractor shall be liable only to repay to the purchaser all money paid by the purchaser to him in respect of such plant.

3.39.2 In the event of such rejection, the purchaser shall be entitled to use of the plant in responsible and proper manner till a time reasonable sufficient to enable him to obtain other replacement plant. During the period the rejected plant is used commercially, the contractor shall be entitled to a reasonable sum as payment for such use. Provided that the decision of the Engineer-in-charge in regard to quantum of such payment shall be final and binding on the contractor.

**3.39 GUARANTEE :**

3.39.7 The supplier must ensure that the goods supplied under the contract are new, unused and of most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the contract.

3.39.8 That guarantee period of the system will be 3(three) years or 60(sixty) calendar months from the date of commissioning whereas for modules the guarantee should be 10(ten) years/specified by the Govt.of India MNES from time to time. The contractor shall remain liable to replace any defective parts that may develop in the plant of his own manufacture or

that of his sub-contractors under the conditions provided for by the contract under proper use, and arising solely from faulty design, materials or workmanship, provided always that such defective parts as are not, repairable at site and are not essential in the meantime to the contractor's works at the expenses of the contractors unless otherwise arranged.

3.39.9 If it becomes necessary for the contractor to replace or renew defective parts of the plants under this clause, the provisions of the first paragraph of this clause shall apply to the parts of the plant so replaced or renewed until the expiration of six months from the date of such replacement or renewal or until the end of the above mentioned period of 60(sixty) months.

3.39.10 If any defects not remedied within a reasonable time, the purchaser may proceed to do work at the contractor's risk and expenses, but without prejudice to other rights which the purchaser may have against the contractor in respect of such defects.

3.39.11 At the end of guarantee period, the contractor's liability shall cease. In respect of goods not covered by the first paragraph of this clause, the purchaser, shall be entitled to the benefit of such guarantee given to the contractor by the original supplier or manufacturer of such goods.

3.39.12 During the comprehensive maintenance contract/ guarantee period of 36(thirty six) calendar months, the contractor shall be responsible for any defects in the work due to faulty workmanship or due to use of sub-standard materials in the work. Any defects in the work during the guarantee period shall therefore, be rectified by the contractor without any extra cost to MNREDA within a reasonable time from the date of receipt of such intimation from MNREDA failing which MNREDA shall take rectification work at the cost of the contractor.

#### 3.40 **COMPREHENSIVE MAINTENANCE CONTRACT PERIOD OF POWER PLANTS AND SYSTEMS :**

3.40.13 The contractor shall maintain and regularly check monthly or quarterly the systems for a period of 5(five) years from the date of commissioning.

- 3.40.14 The Contractor will bear the cost of all consumable, spare parts and repairing expenses during the CMC period.
- 3.40.15 The Purchaser reserves the option at his discretion to request the contractor to continue the CMC of the plant from the first day of 61<sup>st</sup> calendar month. The purchaser will bear the cost of replacement spare and service charges for this period, on mutually agreed rates.
- 3.40.16 The contractor shall maintain performance data of the plant and submit the same to MNREDA at least once in every month/quarterly.
- 3.40.17 The security of the power plant will rest with the purchaser
- 3.40.18 The deputed personnel shall be qualified and well trained so that they can handle any type of operational hazards quickly and timely.
- 3.40.19 The deputed personal shall have to keep daily log sheets for the power plant as per approved format to be supplied by MNREDA after commissioning of the plant.
- 3.40.20 The deputed personnel shall be in a position to check and test all the equipment regularly, so that, preventive maintenance and repair, if required, could be taken well in advance to save any equipment from damage. Any abnormal behavior of any equipment shall be brought to the notice of MNREDA immediately for taking appropriate preventive action.
- 3.40.21 The deputed personnel shall keep the power plant clean at all times.
- 3.40.22 Normal and preventive maintenance of the power plant, such as cleaning of module surface, topping of batteries, tightening of electrical connections, changing of tilt angle of module mounting structure, cleaning and greasing of battery terminals etc. as required.
- 3.40.23 Deputed personnel will operate the plant in accordance with the availability of solar energy stores in the battery bank. Under no circumstances, the operator shall run the power plant damaging the battery bank, in case of non-availability of solar power.
- 3.40.24 During CMC period, if there is any loss or damage of any equipment of the power due to mishandling mismanagement or due to other reasons whatsoever, the contractor shall be responsible for immediate replacement/rectification. The damaged component may be repaired, if it is understood after examination that after repairing, the performance of the component shall not be degraded. Otherwise the defective component shall have to be replaced by new one without any extra cost.

**3.41 ARBITRATION :**

3.41.1 Except where otherwise provided if at any time 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 arbitrator appointed by MNREDA at the time of dispute after ascertaining the terms of reference mutually.

3.41.4 The Arbitrator will preferably be a member of Arbitration Council and arbitration proceeding will take place as per provisions of Arbitration Act 1940 or any statutory modifications or re-enactment thereof and the rules made there under and for the time being in force shall apply.

3.41.5 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 withheld on account of such proceedings except to the extent which may be in dispute.

**3.42 COURT OF COMPETENT JURISDICTION :**

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

**3.43 CONSTRUCTION OF CONTRACT :**

The contract shall in all respect be construed and operated as a contract as defined in the Indian Contract Act. 1972 and all the payments thereunder shall be made in Indian Rupees unless otherwise specified.

**3.44 ADDRESS OF THE CONTRACTOR AND NOTICES AND COMMUNICATION ON BEHALF OF THE PURCHASER.**

3.44.3 For all purchase of the contract, including arbitration thereunder, the address of the contractor mentioned in the tender shall be the address to which all communications addressed to the contractor shall be sent, unless the contractor had notified a change by a separate letter containing no other communication and sent by registered post acknowledged due to the Engineer. The contractor shall be solely responsible for the consequence of an omission to notify a change of address in the manner aforesaid.

3.44.4 Any communication or notice behalf of the purchaser in relation to the contract may be issued to the contractor by Engineer and all such communication and notice may be served on the contractor either by registered post or under certificate of posting or by ordinary post or by hand delivery at the option of the officer.

3.45 **CONTRACT DOCUMENTS & MATTERS TO BE TREATED AS CONFIDENTIAL :**

All documents, correspondence, decision and other matters concerning the contract shall be considered as confidential and restricted nature by the contractor and he shall not divulge or allow access thereto unauthorized person of any kind.

3.46 **FINAL BILL :**

The final bill relating to the contract shall be prepared only when the equipment have been installed and tested for final acceptance and it will include the adjustment of all claims against the contractor by the Engineer-in-charge and awarded in his favour by the arbitrator up to date of preparation of the final bill.

3.47 **ALLOTTMENT OF WORK :**

The purchaser may be allotted the work to more than 1(one) firm in the observation that the work should be completed in the scheduled/targeted time.

4. **SCOPE OF WORK & TECHNICAL SPECIFICATION :**

4.1 The scope of work shall be include.

1.1.3 Supply, installation, testing and commissioning of SPV Domestic Home Lighting System of MNES approved Model-II with Integration of SPV Street Lighting System of 74 Wp.

1.1.4 The Annual Maintenance Contract for all the system installed in these 6 Nos. of villages for 3(three) years after end of the 2 (two) years warranty period.

4.2 **SPECIFICATION FOR DOMESTIC HOME LIGHTING SYSTEM ;**

**4.2.1 TYPE OF SYSTEM –MODEL-2 OF MNES APPROVED MODEL.**



**4.2.2 SOLAR PV MODULES :**

- x) Solar Module shall consist of redundantly interconnected 36 Photovoltaic cell and the peak power of 37 Wp under STC.
- xi) SPV modules must be tested and certified by an independent testing laboratory that is accredited with ISO guide 25.
- xii) Photo electrical conduction efficiency of SPV modules should be greater than 12% Modules shall be made of high transitivity glass front surface giving high encapsulation gain and silicon rubber edge sealant for modules protection & mechanical support.
- xiii) Modules shall perform satisfactorily in relative humidity upto 100% with temperature between 10°C and 90°C and to withstand a gust upto 200 Km/Hr. from back side of the modules. Modules shall be of crystalline type employing lamination technology using established polymer and toddler laminate.
- xiv) The rated power output of modules shall not vary more than 5% from the average power rating.
- xv) A minimum warranty of 10 years is available with degradation of power generated not exceeding 10% over the entire 10 years period.
- xvi) The fill factor of modules shall not be less than 0.70
- xvii) The module should be provided with a junction for provision of external screw terminal connection and with an arrangement for low voltage drop by bypass/blocking diode.
- xviii) Data sheet should be furnished as follows :-

- (a) Module type :-----
- (b) Module Dimension :-----
- (c) No of cell & Wattage :-----
- (d) Solar cell manufacturer type :-----
- (e) Make of solar module :-----
- (f) Solar Module frame material :-----
- (g) Nominal voltage :-----
- (h) Operating voltage of solar Module :-----
- (i) Peak power voltage(Vmp) at 50°C :-----
- (j) Peak power current(Imp) at 50°C :-----
- (k) Open circuit voltage(Voc) at 50°C :-----
- (l) Short circuit (Ioc) at 50°C :-----
- (m) Maximum temperature rise of Solar cell under severe working Conditions over maximum ambient Temperature :-----
- (n) Operating temperature conditions of modules. :-----
- (o) Weight of each module :-----

- x) Photovoltaic modules should have a distinctive marked the name of manufacturer Distinctive Logo, Model No. and serial No.

#### 4.2.3 **FRAME FOR MODULE :**

- (i) The structure of modules shall be made of hot dip galvanized MS angle of size as per size of the modules and embedded to G.I.Pipe of 2" size with 1m long at a proper angle with nut and bolts system to fix to a roof top or pole. All nuts and bolts shall be made of very good quality stainless steel SS-304.
- (ii) The structure shall be design to allow easy replacement of any modules.
- (iii) All fastener shall be of stainless steel SS-304.
- (iv) Metallic frame structure with corrosion resistance pain to be fixed as indicated on (ii) above on the roof of the house to hold the SPV module. The frame structure should have a provision to adjust its angle if inclination to the horizontal between 0-45°, so that it can be installed at the specific till angle.

#### 4.2.5 **CONNECTION WIRE/CABLE :**

Necessary cable/wire should be provided as per requirement from module to charge controller and battery with minimum of 10m long. Size and make of cable should be specified clearly.

#### 4.2.5 **CHARGE CONTROLLER/ELECTRONICS :**

- (i) The inverter should be quasi sine wave/sine wave type with frequency in the range of 20-30 Khz. Half wave operation not acceptable.
- (ii) The total electronic efficiency should be at least 80%.
- (xi) No blackening or reduction in the lumen output by more than 10% should be observed after 1000 ON/OFF Cycles (two minutes ON followed by four minutes OFF 1-one cycle)
- (xii) The ideal current consumption should not be more than 10 mA.
- (xiii) Electronics should operate at 12V and should have temperature compensation for proper charging of the battery through out the year.
- (xiv) Necessary lengths of wires/cables switches suitable for DC use and fuses should be provided.

- (xv) Adequate protection is to be incorporated under No load conditions i.e. when lamps are removed and the system is switch ON.
- (xvi) The system should have protection against battery over charge and deep discharge conditions.
- (xvii) Fuses should be provided to protect against short circuit conditions.
- (xviii) Controller should also have a provision for Fan connection inspite of the fact as stated at section 4.8.1.

#### 4.2.6 **LAMPS :**

- (i) The lamps will be of compact fluorescent (CFL) type either 4 pin/2 pin types with rating of 5 W/9 W. For 4-pin type CFL, a suitable preheating circuit must be provided.
- (ii) The light output from lamps should be around 600+/- 5% lumens for 9 CFL and 900 +/- 5% lumen for 11 W CFL. No blackening or reduction in the lumen output by more than 10% should be observed after 1000 ON/OFF cycle (two minutes on followed by four minutes OFF in on cycle).
- (iii) The lamps should be housed in an assemble suitable for indoor use with a reflector on its back, while fixing assembly, the lamp should be held in a base up configuration.
- (iv) The details specification, make of lamp should be furnished by the firm/supplier.

#### 4.2.7 **BATTERY :**

- (i) The battery will be of flooded electrolyte type, positive tubular plat low maintenance lead acid battery of Exide/equivalent make.
- (vi) The battery will have a minimum rating of 12V of 40 Ah at C/10 discharge rate depending on model.
- (vii) 75% of the rated capacity of the battery should be between fully charged and load cut off conditions.
- (viii) A vented metallic box with acid proof corrosion paint for housing the storage battery indoors should be provided.
- (ix) Specification details and write up on battery should be furnished.

4.2.8. **OTHER FEATURES :**

- (i) The system be provided with 2 LED indicators a green light to indicate charging in progress and a red LED to indicate deep discharge conditions of the battery. The green LED should glow only when the battery is actually being charged.
- (ii) There will be a name plate on the system which will give :
  - (a) Name of the manufacturer of Distinctive Logo.
  - (b) Serial Number
- (vi) Components and parts used in solar home systems should conform to the latest BIS specifications, wherever such specifications are available and applicable.
- (vii) The PV module(s) will be warranted for a minimum period of 10 years from the date of supply and the solar home system (including the battery) will be warranted for a period of two years from the date of supply.
- (viii) The warranty Card to be supplied with the system must contain the details of the system supplied. The manufacturers can also provide additional information about the system and conditions of warranty as necessary.
- (vi) An operation, instruction and maintenance manual in English should be provided with the solar home system. The following minimum details must be provided in the manual.
  - (a) About Photovoltaics
  - (b) About solar home system-its components and expected performance.
  - © About PV Module
  - (d) About CFL
  - (e) About Battery
  - (f) Clear instruction about mounting of PV modules(s)
  - (e) About electronics

- (f) About charging and significance of indicators
- (g) DO's and DON'T's
- (h) Clear instruction on regular maintenance and trouble shooting of solar home system.

**4.3 SPECIFICATION FOR SOLAR STREET LIGHTING SYSTEM :**

**4.3.1 SOLAR PV MODULES :**

(i) Solar Module shall consist of redundantly interconnected 36 Photovoltaic cell and the peak power of 74 Wp under STC.

- (ix) SPV modules must be tested and certified by an independent testing laboratory that is accredited with ISO guide 25.
- (x) Photo electrical conduction efficiency of SPV modules should be greater than 12% modules shall be made of high transitivity glass front surface giving high encapsulation gain and silicon rubber edge sealant for modules protection and mechanical support.

Modules shall perform satisfactorily in relative humidity upto 100% with temperature between 10°C and 90°C and to withstand a gust upto 200 Km/hr. from back side of the modules. Modules shall be of crystalline type employing lamination technology using established polymer and toddler laminate.

- (xi) The rated power output of modules shall not vary more than 5% from the average power rating.
- (xii) A minimum warranty of 10 years is available with degradation of power generated not exceeding 10% over the entire 10 years period.
- (xiii) The fill factor of modules shall not be less than 0.70.
- (xiv) The module should be provided with a junction for provision of external screw terminal connection and with an arrangement for low voltage drop by bypass/blocking diode.
- (xv) Data sheet should be furnished as follows :-

- (a) Module type :-----
- (b) Module Dimension :-----
- (c) No of cell & Wattage :-----
- (d) Solar cell manufacturer type :-----
- (e) Make of solar module :-----

- (f) Solar Module frame material :-----
  - (g) Nominal voltage :-----
  - (h) Operating voltage of solar Module :-----
  - (i) Peak power voltage(Vmp) at 50°c :-----
  - (j) Pear power current(Imp) at 50°c :-----
  - (k) Open circuit voltage(Voc) at 50°c :-----
  - (l) Short circuit (Ioc) at 50°c :-----
  - (m) Maximum temperature rise of  
Solar cell under severe working  
Conditions over maximum ambient  
Temperature :-----
  - (n) Operating temperature conditions :-----  
of modules.
  - (o) Weight of each module :-----
- x) Photovoltaic modules should have a distinctive marked the name of manufacturer Distinctive Logo, Model No. and serial No.

**4.3.2 LAMPS :**

- (b) The lamps will be of compact fluorescent (CFL) type either 4 pin/2 pin types with rating of 5 W/9 W. For 4-pin type CFL, a suitable preheating circuit must be provided.
- (ii) The light output from lamps should be around 600+/- 5% lumens for 9 CFL and 900 +/- 5% lumen for 11 W CFL. No blackening or reduction in the lumen output by more than 10% should be observed after 1000 ON/OFF cycle (two minutes on followed by four minutes OFF in on cycle).
- (iii) The lamps should be housed in an assemble suitable for indoor use with a reflector on its back, while fixing assembly, the lamp should be held in a base up configuration.
- (iv) The details specification, make of lamp should be furnished by the firm/supplier.

**4.3.3 BATTERY :**

- (i) The battery will be of flooded electrolyte type, positive tubular plat low maintenance lead acid battery of Exide/equivalent make.
- (ii) The battery will have a minimum rating of 12V of 40 Ah at C/10 discharge rate depending on model.
- (iii) 75% of the rated capacity of the battery should be between fully charged and load cut off conditions.

- (iv) A vented metallic box with acid proof corrosion paint for housing the storage battery indoors should be provided.
- (v) Specification details and write up on battery should be furnished.

#### 4.3.4 **CHARGE CONTROLLER/ELECTRONICS :**

- (i) The inverter should be quasi sine wave/sine wave type with frequency in the range of 20-30 Khz. Half wave operation not acceptable.
- (ii) The total electronic efficiency should be at least 80%.
  
- (xi) No blackening or reduction in the lumen output by more than 10% should be observed after 1000 ON/OFF Cycles (two minutes ON followed by four minutes OFF 1-one cycle)
- (xii) The ideal current consumption should not be more than 10 mA.
- (xiii) Electronics should operate at 12V and should have temperature compensation for proper charging of the battery through out the year.
- (xiv) Necessary lengths of wires/cables switches suitable for DC use and fuses should be provided.
  
- (xv) Adequate protection is to be incorporated under No load conditions i.e. when lamps are removed and the system is switch ON.
- (xvi) The system should have protection against battery over charge and deep discharge conditions.
- (xvii) Fuses should be provided to protect against short circuit conditions.
- (xviii) A Blocking diode, should be provided as part of the electronics. To prevent reverse flow of current of current through the PV module(s). In case such a diode is not provided with the solar module(s).

#### 4.3.5 **MECHINCAL HARDWARE :**

- i) A metallic frame structure (with corrosion resistance pint) to be fixed on the pole to hold the SPV module(s). The frame structure should have provision to adjust its angle of inclination to the horizontal between 0 and 45. So that the module(s) can be oriented at the specified till angle.

- ii) The pole should be made of mild steel pipe with a height of 4 metres above the ground level, after grouting and final installation. The pole should have the provision to hold the weather proof lamp housing and the battery box and should be painted with a corrosion resistant paint.
- iii) A vented acid proof and corrosion resistant painted metallic box for outdoor use should be provided for housing the battery with proper locking arrangement system.

#### 4.3.6 **OTHER FEATURES :**

- i) The system be provided with 2 LED indicators a green light to indicate charging in progress and a red LED to indicate deep discharge conditions of the battery. The green LED should glow only when the battery is actually being charged.
  - ii) There will be a name plate on the system which will give :
    - (a) Name of the manufacturer of Distinctive Logo
    - (b) Serial number
  - (iii) Components and parts used in solar home systems should conform to the latest BIS specifications, wherever such specifications are available and applicable.
  - iv) The PV module(s) will be warranted for a minimum period of 10 years from the date of supply and the solar home system (including the battery) will be warranted for a period of two years from the date of supply.
  - v) The warranty Card to be supplied with the system must contain the details of the system supplied. The manufacturers can also provide additional information about the system and conditions of warranty as necessary.
- vi) An operation, instruction and maintenance manual in English should be provided with the solar home system. The following minimum details must be provided in the manual.
- (a) About Photovoltaics
  - (b) About solar home system-its components and expected performance.
  - © About PV Module
  - (d) About CFL



- (e) About Battery
- (f) Clear instruction about mounting of PV modules(s)
- (g) About electronics
- (h) About charging and significance of indicators
- (i) DO's and DON'T's
- (j) Clear instruction on regular maintenance and trouble shooting of solar home system.
- (k) Name and address of the person or service center to be contacted in case of failure or complaint.

4.4 **FORMAT FOR WARRANTY CARD TO BE SUPPLIED WITH EACH SOLAR HOME SYSTEM AND STREET LIGHTING SYSTEM.**

1. Name and address of  
Manufacturer/supplier of the system :
2. Name and address of the purchasing agencies :
3. Date of supply of the system :
4. Details of PV Module(s) supplied in the system  
Make (Name of the Manufacturer) :  
  
Model :  
Serial No.(s) :  
Wattage of the PV Module(s) under STC  
Warranty valid upto :
5. Details of Battery :  
Make (Name of the Manufacturer) :  
Model :  
Batch/Serial No.(s) :  
Rated V & AH capacity at C/20/C/10 rate at 20C :  
Warranty valid upto :
6. Details of Electronics and other BOS items  
Make (Name of the Manufacturer) :  
Model :  
Serial No. (s) :  
Warranty valid upto :
7. Designation and address of the person to be  
Contacted for claiming warranty obligations :

4.5 **SPARE PARTS AND REPAIRING TOOLS AND KITS :**

The supplier shall provide spare required during warrantee period free of cost. Beyond warrantee period the supplier shall ensure that spare are made available to MNREDA at reasonable charges. Repairing tools and kits i.e. multimeter, screw driver sets, spanners etc. should be supplied for each plant.

4.6 **PACKAGING, SHIPPING AND MARKING :**

The supplier shall be responsible for assuring that all commodities shipped are properly packed and protected to prevent damage or deterioration during shipment. Packaging and shipping cost shall be borne by the supplier. Customs clearance and all costs and actions associated with import duties taxes and processing of documents within India are borne by the bidder.

4.7 **INSTALLATION AND COMMISSIONING :**

4.7.3 The offer should include provision for installation of the entire system.

4.7.4 The supplier is responsible for the supply of instrumentation required to commission and installation. The plant will be commissioned in the presences of authorized personnel or its nominated representatives. A commissioning protocol should be provided in the offer and an acceptance report will be prepared and signed by all participating parties.

4.8 **AFTER SALES SERVICE :**

The offer should include the terms and conditions for after sales service. The detailed content of the service proposed, and its duration should be clearly stated. Bidders having own/authorized service centers in Shillong or N.E. Region shall be given preference.

4.9 **TRAINING AND AFTER SALES SERVICE :**

Training and after sales service is an important component of supply. The terms and conditions for training and after sales supply and service are to be presented clearly in the bit and the extent and duration of after sales support clearly defined. An explanation of preventative maintenance schedule, plan of operation, scope and implementation of the sale service is to be defined.

4.10 **EXPERIENCE :**

**Past project similar in nature :**

A Comprehensive list of past projects implemented, by the bidder/bidder group company/collaborator in India or abroad, including clients, dates size of projects and any other relevant material should be included in the offer. Companies having experience in execution and operation of similar solar power plants shall be given preference.

4.11 **DOCUMENTATION :**

One set of installation manual/user manual shall be supplied along with the system. Assembly of the complete system shall be shown with computer aided design and drawing form. Step by step maintenance procedures shall be given in the manuals

4.12 **GUARANTEE PERFORMANCE AGREEMENT :**

An agreement listed system and sub systems of the offer for each component Guarantee has to be signed between supplied and MNREDA along with the performance guarantee as listed in section 3.4.

4.13 **DEVIATION OF THE TENDER :**

In case of deviation the below format should be observes.

4.13.1 General condition of contract :

Sl. No.	Specification clause	Deviation by the tender	Justification by the tender.
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4.13.2 Technical Specification of contract :

Sl. No.	Specification clause	Deviation by the tender	Justification by the tender.
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**4.14 MARKING OF MNREDA NAME IN SOLAR PHOTOVOLTAIC MODULE :**

It is to be noted that in the distinctive logo of the firm in the Photovoltaic Module it is required to print also the name of the Purchaser marked as “MNREDA”. This is to avoid the frequent theft of modules.

4.15 It is to be noted that were submission of Test Report without providing of Technical Specification as required at section 4.2, 4.3 & 4.4, offer, will stands automatically rejected.

**PART – B**  
**TABLE OF CONTENTS**

**5. BIDDING SCHEDULED:**

Sl. No.	Description	Quantity	Unit	Rate (Rs)	Amount (Rs)
A	Cost of System				
I	Cost of SPV Domestic Home Lighting System of 37 Wp 12V, 40AH alongwith accessories as per Annexure-I	206	Nos/System		
2.	Cost of SPV Street Lighting System of 74Wp, 12V 75AH as per Annexure	40	Nos/System		
	<b>Total:</b>				
B.	Transportation	6	No. of Villages		
C.	Installation and Commissioning of System	6	No. of Villages		
D.	CMC for 3 year	6	No. of Villages		
	<b>Total:</b>				

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

Note: Annexure-I & II price of System should be indicated without which Bidding Scheduled will be treated as incomplete.

Seal & Signed of Authorized  
Person of the Firm

**ANNEXURE-I.**

**5.1 DETAILS COST OF 74 WP DOMESTIC HOME LIGHTING SYSTEM.**

SL. No.	Description of item	Quantity	Unit	Rate/Unit (Rs.)	Amount (Rs.)
1.	Supplying of 74 Wp Solar Photovoltaic Module.	1	No.		
2.	Frame of module	1	No.		
3.	Switches	2	Nos.		
4.	Cables etc.	L.S.	No.		
5.	Charges controller/electronics	1	No.		
6.	Battery	1	No.		
7.	Battery box & rock	1	No.		
8.	Luminier & Fixture	2	Nos.		
	Total Ex-work cost of each system				

(Rupees-----  
-----) only.

Seal & Signed of Authorized person  
of the Firm

**ANNEXURE-II.**

**5.2 DETAIL COST OF 74 WP SOLAR STREET LIGHT.**

SL. No.	Description of item	Quantity	Unit	Rate/Unit (Rs.)	Amount (Rs.)
1.	Supplying of 74 Wp Solar Photovoltaic Module.	1	No.		
2.	Frame of Module	1	No.		
3.	Post of frame	1	No.		
4.	Battery	1	No.		
5.	Battery and battery rock	1	No.		
6.	Fixture & Luminier	1	No.		
7.	Controller & Switches	1	No.		
8.	Connecting cable/wire	L.S.	No.		
	Total ex-work cost of system				

(Rupees-----  
-----)only.

Seal & Signed of Authorized person  
of the Firm