

**MEGHALAYA NON-CONVENTIONAL
&
RURAL ENERGY DEVELOPMENT AGENCY**

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

Tender Document for Design, Manufacture, Supply, Installation, Testing & Commissioning, Operation and Maintenance 170 Nos. of 3 KW Solar Photovoltaic Power Plant Stand Alone Systems at Different Institutions in Meghalaya

Tender document issued to M/S _____
_____ against application
vide letter No. _____ dated _____
and against payment of Rs. 10,000/- (Rupees ten thousand) only vide Cash/Bank Draft
No. _____ dated _____
of _____ Bank towards cost of Tender Document.

**PART – ‘A’
GENERAL TERMS AND CONDITION
COMMERCIAL & TECHNICAL BID
(Page No. 1 to 26)**

Issued By :

For Director
Meghalaya Non-Conventional & Rural
Energy Development Agency

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MEGHALAYA NON-CONVENTIONAL AND RURAL ENERGY DEVELOPMENT AGENCY

Near BSF Camp, Mawpat, Shillong – 793012
Phone No. 0364-2537343, E-Mail : mnreda_shg@bsnl.in ## www.mnreda.Gov.in

1. NOTICE INVITING TENDER

No. MNREDA/1371/2010/143 : Sealed Tender with 90 (ninety) days validity are invited from the Authorized and approved Manufacturers and Suppliers who has certification from the Test Centre recognized by the Govt. of India, MNRE and having experience to undertake the below mentioned work.

Sl. No.	Work Number	Name of Work	Cost of Tender Paper (Rs.)	Date of issue of tender Paper	Date of submission of tender	Date & Time of opening of commercial & Technical bid
1.	No. MNREDA/1371/2010/143	Electrification of 14 Nos. of remote village through SPV home lighting system with integration of SPV street lighting system.	Rs. 2,000.00	17.1.11 to 04.02.11	07.02.11 to 12.00 hours	07.02.11 at 13.00 hours for both commercial, Technical and Financial Bid.
2.	No. MNREDA/1409/2010/324	Design, supply, installation & commissioning of various capacity solar water heating system (100 LPD) to 2000 LPD) unit capacity in different Resort, Institution & individual in Meghalaya.	Rs. 5,000.00	17.01.11 to 04.02.11	07.02.11 Upto 13.00 hours	07.02.11 at 14.00 hours.
3.	No. MNREDA/1378/2009/2010/130	Design, supply, installation & commissioning of 170 Nos. of 3 Kw SPV power plant at different Institution in Meghalaya.	Rs. 10,000.00	17.01.11 to 04.02.11	07.02.11 Upto 14.00 hours.	07.02.11 at 15.00 hours.

Tender paper will be available with effect from the above mentioned dates on payment of the serialwise / workwise cost of tender papers by Demand Draft/Banker's Cheque/cash in favour of Member Secretary-cum-Director, Meghalaya Non-Conventional and Rural Energy Development Agency, Shillong. Offers can also be submitted by downloading of Tender papers/documents subjected to payment of cost of tender papers before casting of offer. In case of tender papers before

casting of offer. In case of opening date is declared as holidays, tender shall be opened in the next working day at the same time and hour.

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

Memo No. MNREDA/1371/2010/143(A)

Dated Shillong, the 6th January, 2011

- Copy to :-
1. The Additional Chief Secretary,
to the Govt. of Meghalaya,
Power Department.
 2. Shri Sudhir Mohan,
Adviser,
Minister of New & Renewable Energy
Block No. 14, CGO Complex,
Lodhi Road, New Delhi-110003.
 3. Dr. G. Prasad
Director,
Minister of New & Renewable Energy
Block No. 14, CGO Complex,
Lodhi Road, New Delhi-110003.
 4. Dr. Sant Ram,
Director, (ST),
Minister of New & Renewable Energy
Block No. 14, CGO Complex,
Lodhi Road, New Delhi-110003.
 5. The State Informatic Officer,
National Informatics Centre
Meghalaya, Shillong. } With a request display the NIT & Tender
document on the website enclosed herewith
both hard and soft copy.
 6. Shri Rajashi S. Choudhury,
Assistant Manager,
The Indian Express Ltd.
23, Dr. S. K. Bhuyan Road,
Dighali Pukhuri (East)
Guwhati-781001.
E-Mail – express.ne@gmail.com } With a request to publish in one issue of
financial express all Edition. Editions Mumbai
Delhi/Kolkata/Chennai/Kochi/Bangalore/
Hyderabad/Pune/Chandigarh/Ahmedabad/
Gujarat and to be submitted a bill in duplicate
alongwith all sample of advertisement of all
editions for necessary payment.

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

2. **SPECIAL CONDITIONS OF CONTRACT :**

2.1 **Distribution of list of School in different District.**

Sl. No.	District	No. of Institutions/ School
1.	East Khasi Hills District	46
2.	South Garo Hills District	24
3.	West Garo Hills District	23
4.	East Garo Hills District	21
5.	West Khasi Hills District	21
6.	Ri-Bhoi District	19
7.	Jaintia Hills District.	16
	Total	170

2.2 LOAD DETAILS FOR EACH INSTITUTION :-

Sl. No.	Name of Institution / School	Load Details (Kw)		
		Light Point	Computer Point	Fan Point
1	2	3	4	5
1.	Pine Mount School, Shillong Municipality	0.90	2.00	0.30
2.	Lady Keane Girls Sec. School, Shillong - 1	0.80	2.00	.60
3.	Mawryngkneng Higher Sec. School, Mawryngkneng	1.00	2.00	.60
4.	Smit Higher Sec. School. Smit	0.50	2.50	.60
5.	Mawsynram Higher Sec. School	0.80	1.70	.90
6.	Laitbah Union Higher Sec. School.	0.70	2.50	.40
7.	Nongpathaw Sec. School, Diengiei , Mawmih	0.90	2.40	.50
8.	Y.M.C.A Computer Training Centre Keating Road,Shillong	0.60	2.50	.50
9.	Mawsynram Border Area College, Mawsynram	1.00	2.00	.60
10.	Wahkaji Sec. School Wahkaji	0.90	2.00	.60
11.	Jakrem Presbyterian Sec. School	1.4	2.0	.50
12.	Nonglang Sec. School. Nonglang	0.90	2.00	0.30
13.	Tirot Sing Memorial College. Mairang	0.90	2.40	.50
14.	Nongstoin Public Sec. School, New Nongstoin	0.80	2.50	.60
15.	Indira Gandhi Memorial Sec. School.Rangasora,Ranikor	0.60	2.70	.60
16.	Tirot Sing Memorial Higher Sec. Nongkhlaw	0.70	2.50	.60
17.	Narwan Sec. School Narwan Village	0.60	2.40	.90
18.	Jalaphet Sec. School , Jalaphet Village	0.90	2.00	.50
19.	Latyrke Sec. School , Latyrke Village	0.80	2.00	.60
20.	Lamyrsiang Sec. School, Lamyrsiang	0.50	2.50	.60
21.	Umkiang Sec. School, Umkiang	0.60	2.50	.40
22.	Tluh Sec. School, Tluh Village	0.90	2.40	.50

1	2	3	4	5
23.	Ialong Sec. School, Ialong Village	0.80	2.70	.60
24.	Byndihati Sec. School , Byndihati Village	0.70	2.40	.30
25.	Saipung Sec. School , Saipung Village	0.80	2.50	.40
26.	Moulasei Govt. Sec. School , Saipung	0.60	2.00	.80
27.	Patharkmah Govt. Higher Sec. School , Patharkmah	0.90	2.50	.50
28.	Umpathaw Sec. School , Umpathaw	0.70	2.00	.60
29.	Raid Nongbri Sec. School , Saiden	0.80	2.00	.70
30.	Mynken Govt. Sec. School , Bhoi Rymbong	0.90	2.00	.60
31.	Saiden Sec. School , Saiden	1.00	2.00	.60
32.	Mawrong Govt. Sec. School , Nongpoh	0.70	2.50	.60
33.	Rongregre Govt. Higher Sec. School ,Williamnagar.	0.60	2.50	.70
34.	Bajengdoba Higher Sec. School , Bajengdoba	0.50	2.50	.60
35.	Damas Sec. School ,Damas	0.70	2.50	.50
36.	Kharkutta Govt. Sec. School , Kharkutta	0.90	2.00	.70
37.	Govt.Higher Sec. School , Rongjeng	0.80	2.00	.60
38.	Chidekgre Govt. School, Rongjeng	0.80	2.00	0.50
39.	J.M.V. School, Rajabala	0.90	2.00	.70
40.	Rongku Govt. Girl's School. Rongku, Baghmara.	1.00	2.00	.50
41.	Baghmara Govt. Higher Sec. School ,Baghmara.	0.80	2.50	.50
42.	Sutnga Presbyterian Sec School, Sutnga Village.	0.70	2.50	0.60
43.	R.C. Tariang Memorial Sec. School, Thangbuli Village.	0.80	2.00	0.50
44.	Seiñ Raj Sec. School, Jowai.	0.70	2.50	0.50
45.	H.K. sing Sec. School, Jowai.	0.60	2.50	0.50
46.	Marian Hill Higher Sec. School, Jowai.	0.80	2.00	0.50
47.	St. Mary's Mazarello Girls Higher Sec. School, Jowai.	0.80	2.50	0.50
48.	Horirai Syiemlieh Memorial Sec. School, Phod Ja-ud Rangthong.	0.90	2.20	0.50
49.	Balang Mawlangwir Higher Sec. School, Mawlangwir.	1.00	2.00	0.60

1	2	3	4	5
50.	Rising Sec. School, Sohkhylam.	0.80	2.00	0.50
51.	Jingiaseng Kynthei Rangthong Presbyterian Sec. School, Mawkyrwat.	0.80	2.00	0.60
52.	Mawthawpdah Presbyterian Sec. School, Mawthawpdah.	0.90	2.00	0.30
53.	Christ King Sec. School, Bangla Nongpluh.	0.90	2.00	0.50
54.	Presbyterian Higher Sec. School, Umdang.	0.80	2.00	0.60
55.	St. Thomas Higher Sec. School, Mairang.	0.90	2.00	0.40
56.	Mairang Presbyterian Higher Sec. School, Mairang	0.60	2.50	0.40
57.	St. Joseph Sec. School, Nongkaseng Markasa.	0.80	2.50	0.40
58.	St. Xavier Sec. School, Nanbah. New Nongstoiñ.	0.60	2.50	0.30
59.	Andreson Higher Sec. School, New Nongstoiñ.	0.90	2.00	0.40
60.	St. Peter's Higher Sec. School, Pyndengrei.	0.90	2.00	0.60
61.	Presentation School, Nongkhylam.	0.80	2.50	0.30
62.	Auxilium Girls Higher Sec. School, Nongthymmai.	0.70	2.50	0.40
63.	Cherra Presbyterian Sec. School, Sohra.	0.90	2.00	0.50
64.	Good Shepherd Higher Sec. School, Jongksha Smit.	1.00	2.00	0.50
65.	KJP'S Girls Higher Sec. School, Shillong.	0.60	2.00	0.60
66.	Mawkhar Cristian Sec.sc Mawkhar.	0.80	2.00	0.70
67.	Sacred Heart Girls Higher Sec. School, Mawlai Phudmawri.	1.00	2.00	0.40
68.	St. Gabriel's Higher Sec. School, 3 rd Mile Upper Shillong.	0.90	2.00	0.50
69.	St. John Bosco girls Sec. School, Sohra.	0.80	2.00	0.50
70.	St. Paul's Higher Sec. School, Marbisu Mawphlang.	0.60	2.50	0.40
71.	Anne Margaret Barr Sec. School, kharang.	0.70	2.50	0.20
72.	Douglas Memorial Sec. School, Nongmynsong, Law u sib.	0.90	2.00	0.30
73.	Green Hills Sec. School, Sohryngkham.	0.60	2.50	0.20

1	2	3	4	5
74.	Holy Child Higher Sec. School, Demthring.	0.80	2.00	0.40
75.	Holy Cross Sec. School, Mawkynrew.	0.90	2.00	0.50
76.	Mawrie Patrick King Sec. School, Laitryngew.	0.60	2.00	0.60
77.	St. Peter's Higher Sec. School, Mawjriong.	0.80	2.50	0.30
78.	St. Peter's Higher Sec. School, Laitlyngkot.	0.90	2.00	0.40
79.	St. Peter's Higher Sec. School, Dangar Balat.	0.90	2.50	0.30
80.	St. Ursula Border Area Sec. School, Mawlong.	0.60	2.50	0.40
81.	Stephen Memorial Sec. School, Mawlai Mawroh.	0.80	2.00	0.50
82.	Sunny Dale Sec. School, Nongthymmai.	1.00	2.00	0.30
83.	Belmont Sec. School, Lumsophoh.	0.60	2.50	0.40
84.	Christian Academy Sec. School, Riatsamthiah.	0.50	2.50	0.50
85.	Glakyn Academy Sec. School, Pohkseh.	0.90	2.00	0.40
86.	Hill Crest Sec. School, Lower Rynjah.	0.90	2.20	0.30
87.	Kiddies Corner School, Lummawrie, Laitumkhrah.	0.80	2.00	0.40
88.	Risa Sec. School, Madanryting	0.90	2.00	0.50
89.	Seven Set Higher Sec. School, Nongmalki.	0.60	2.50	0.50
90.	St. Albert Sec. School, Nongthymmai.	0.70	2.00	0.60
91.	St. George Sec. School, Nongmynsong.	0.50	2.50	0.40
92.	St. Peter's Sec. School, Laitumkhrah.	0.70	2.50	0.20
93.	St. Thomas Higher Sec. School, Rynjah Shillong.	0.90	2.00	0.40
94.	St. Xavier Sec. School, Shillong Upper Nongthymmai.	0.50	2.00	0.80
95.	Loreto Convent, Laitumkhrah Shillong.	0.60	2.00	0.70
96.	J.J.M. Nichols Roy School, Mawsynram.	0.60	2.50	0.40
97.	Nora Evalyn School, Qualapatty Shillong.	0.60	2.00	0.50
98.	Gilead Bethel School, Nongdaneng, Laitkor, Shillong.	0.90	2.00	0.40
99.	Chockpot Sec. School, Chockpot.	0.60	2.00	0.80

1	2	3	4	5
100.	Gasuapara Sec. School, Gasuapara.	0.50	2.50	0.30
101.	Siju Sec. School, Siju.	0.50	2.00	0.70
102.	Ruga Sec. School, Ruga.	0.60	2.00	0.50
103.	Silkigre Sec. School, Silkigre.	0.70	2.50	0.20
104.	Kharukol Sec. School.	0.90	2.00	0.60
105.	Deku Aided School.	0.80	2.00	0.40
106.	Rongrikimgre Sec. School.	1.00	2.00	0.30
107.	St. Thomas Sec. School, Chockpot.	0.90	2.00	0.30
108.	St. John School, Siju.	0.60	2.00	0.60
109.	St. Francis De Sales Sec. School, Baghmara.	0.70	2.50	0.30
110.	Ascension School, Gasuapara.	0.60	2.00	0.70
111.	All Saints School, Rongara.	0.80	2.00	0.60
112.	Nokpante School, Rajarongat.	0.90	2.00	0.40
113.	Don Bosco School, Baghmara.	0.80	2.00	0.70
114.	Dimapara Sec. School.	0.80	2.00	0.70
115.	Sibari Sec. School,	0.60	2.00	0.60
116.	Pionaire Sec. School.	0.60	2.00	0.70
117.	Dabitabari Sec. School.	0.80	2.00	0.70
118.	Mount Bale School.	0.90	2.00	0.50
119.	St. De Sales School, Nongalbibra.	0.90	2.00	0.70
120.	Ascension School, Dominikura.	0.60	2.00	0.80
121.	St. Peter's Sec. School, Umkadhar.	0.60	2.00	0.60
122.	St.Paul's Secondary Sec. School, Nongpoh.	0.50	2.00	0.70
123.	R.B.P. Higher Sec. School, Nongpoh.	0.70	2.00	0.50
124.	Raid Nongtluh Higher Sec. School, Umden	0.80	2.00	0.60
125.	St. Vianey Sec. School, Umsohlait.	0.90	2.00	0.30
126.	Nehru Memorial Higher Sec. School, Umsning.	0.60	2.00	0.70
127.	St. Michael Higher Sec. School, Umsning.	0.60	2.00	0.60
128.	Little Flower Sec. School, Mawbri	0.80	2.00	0.50
129.	Amazing Grace (NIOS)Dulongnar.	0.60	2.00	0.50
130.	St. Ferrando Sec. School, Nongrah.	0.90	2.00	0.50
131.	Alpha English Higher Sec. School, Nongpoh.	0.80	2.00	0.60

1	2	3	4	5
132.	St. Alfred Sec. School, marngar.	0.90	2.00	0.40
133.	St. Francis De Assissi Sec. School, Umsning.	0.90	2.00	0.50
134.	St. Claret High School, Ampati.	0.60	2.50	0.40
135.	Good Shepherd School, Chapati.	0.60	2.00	0.60
136.	Little Flower School, Dadenggre.	0.90	2.00	0.40
137.	Sacret heart School, Dalu.	0.60	2.00	0.60
138.	St. Dominic School, Garobada.	0.50	2.50	0.40
139.	St. Anthony's School, Jenjal.	0.60	2.00	0.50
140.	St. Francis School, Mronggre.	0.70	2.00	0.40
141.	St. Peter School, Durakhar.	0.90	2.00	0.40
142.	St. Michael's School, Rabhagre.	0.80	2.00	0.40
143.	St. Joseph School, Sellsella.	0.80	2.00	0.50
144.	Don Bosco School, Tikrikilla.	0.60	2.00	0.70
145.	T.Mkidata School, Tikrikilla.	0.70	2.00	0.40
146.	Holy Cross School, Rongkhar, Tura.	0.60	2.00	0.50
147.	S.M. Sacred heart School, Tura.	0.60	2.00	0.70
148.	St. Mary's School, Aramile, Tura.	0.80	2.00	0.50
149.	Monfort School, Damakgre, Tura.	0.90	2.00	0.40
150.	Holy Child Hood School, Tura Cathedral.	0.90	2.00	0.60
151.	St. Joseph School, Dalu.	0.90	2.00	0.50
152.	Kristu Jyoti, School, Tikrikilla.	0.80	2.00	0.70
153.	Sacred Heart School, Tura.	0.90	2.00	0.40
154.	Hill View School, Tura.	0.60	2.00	0.50
155.	Sherwood School, Tura.	0.70	2.00	0.50
156.	Sacred Heart Sec. School, School, Williamnagar	0.90	2.00	0.40
157.	St. George School, Samanda.	0.90	2.00	0.60
158.	Trinity Sec. School, Samanda.	0.80	2.00	0.60
159.	Layola Sec. School, Dawagre, Williamnagar.	0.80	2.00	0.50
160.	St. Joseph's School, Chidimit.	0.60	2.00	0.60
161.	Monfort Sec. School, Resubelpara.	0.70	2.00	0.60
162.	Govt. Aided Girls School, Resubelpara.	0.90	2.00	0.40
163.	Don Bosco Higher Sec. School, Mendal.	0.60	2.00	0.70

1	2	3	4	5
164.	Greenyar Sec. School, Williamnagar.	0.80	2.00	0.70
165.	Pennel Sec. School, Williamnagar.	0.90	2.00	0.40
166.	St. Thomas Sec. School, Williamnagar.	0.90	2.00	0.50
167.	Holy Family Sec. School, Rongjeng.	0.80	2.00	0.50
168.	Matardei Sec. School, Dawagre.	0.90	2.00	0.30
169.	St. Paul's Sec. School, Mangsang.	0.80	2.00	0.60
170.	Paschal Sec. School, Resubelpara.	0.90	2.00	0.50

2.3 **Minimum criterion for bidding**

The bidder must have following minimum criterion for bidding:

A. COMMERCIAL & EXPERIENCE:

1. The bidder should be ISO 9001 & ISO 14001 certified
2. The bidder must have similar experience of executing order for more than 125 KWp Solar Power Plant in any state Nodal Agency in India.
3. The bidder must have adequate service network for maintenance of the system North eastern Region.
4. The bidder or its principal company must not have any legal case pending against them in North Eastern Region.
5. The bidder must not black listed by any State Nodal Agency of India.
6. The bidder must not have any record of their installation of power plant has suffered any accident like fire etc.
7. The bidder must submit the documentary evidence of rendering maintenance service to their similar type of project duly certified by any Govt Dept/Customer.
8. The bidder should be manufacturer of Solar PV Module, Electronics etc. No system integrator is allowed to participate in this tender.
9. The bidder must have registered turn over of more than Rs. 90 crore & positive sales growth for last two financial years in India in Solar PV business only.
10. The bidder must have sales tax registered office with service centre in North Eastern Region.
11. The bidder must not have any record of refusing to accept work from any Govt Dept/Customer even after participating in the tendering process
12. The bidder should not quote with individual solar module capacity less than 12V, 120 Wp
13. The bidder must have their solar modules/products approved by MNRE, IEC, CE, DGQA, STQC, CPRI, ETDC, RDSO.
14. The bidder must have completed 10 projects of each value not less than Rs. 1.0 Crore in ten different states of the country in each of last two financial year. Documentary Evidence is must

B. THE TECHNO COMMERCIAL BID MUST CONTAIN THE FOLLOWING:

1. A brief write up about the organization.
2. Audited balance sheet for last two financial years
3. IT Return of last two financial years
4. VAT/Sales Tax Registration Certificate of Govt of West Bengal.
5. Power of Attorney in favour of the signing authority of the bidder signing the bid.
6. A clause by Clause compliance statement with supporting document duly attested by Notary Public/Gazetted Officer of the Commercial Eligibility Criteria.
7. Technical Write up about the system
8. Technical Write Up or Specification and compliance statement of each major components of the system.
9. Detail Single Line Diagram of the system
10. Write up on detail methodology of Comprehensive Maintenance Contract for two years.
11. A work Plan preferably in the form of Bar Chart for completion of supply, installation and commissioning within the stipulated installation schedule mentioned in the tender.
12. Details of Quality Assurance Plan.
13. Details of similar contract executed in last two years with contract reference and contract performance certificate of few clients.

2.4 EXPERIENCE OF THE BIDDER

A comprehensive list of past projects implemented, by the bidder/bidders group company/collaborator in India or abroad, indicating clients, dates, size of projects and any other relevant material should be included in the offer.

2.5 DOCUMENTATION

One set of installation manual/user manual shall be supplied along with the system. The manual shall include complete system details such as array lay out, schematic of the system, inverter details, working principle etc. Step by step maintenance and trouble shooting procedures shall be given in the manuals.

3. **INSTRUCTION TO TENDERER :**

- 3.1 **Distribution of work :-** The Agency (MNREDA) will distribute the work into the 1st three lowest quoted. District wise with the intention to see that the project will be completed within the allotted target date.
- 3.2 The Cost of Tender papers or document should be in the form of Cash/Bankers Cheque No/Demand Draft (Non-refundable) drawn in favour of Member Secretary, Meghalaya Non Conventional and Rural Energy Development Agency, Shillong.
- 3.3 Tender document will be issued by Courier or Speed Post on request but extra payment of Rs. 200/- (Rupees two hundred) only should be made by Demand Draft towards cost of Speed Post or Courier.
- 3.4 Local dealer of any manufacturer or supplier will be issue Tender document but on furnishing of their dealership Certificate and Tender document will be issued in Principal's name.
- 3.5 In the event of postal delayed, MNREDA shall not be held responsible.
- 3.6 Tender document will be issued on any working days within the specified date.
- 3.7 In case the opening date is declared as holiday. Tender shall be open in the next working day at the same time and hour.
- 3.8 Tenderers can submit the Tender by down loading form the website but cost of Tender document has to be furnished before casting of Tender.
- 3.9 Tenderer are to furnish their offer in two seal cover envelope. 1st Envelope marked as "COMMERCIAL AND TECHNICAL BID" should enclosed along with Part A of Tender documents issued in original. And 2nd envelope marked as "FINANCIAL BID" should contain Part - B of Tender issued in original.
- (a) **"Technical Bid"** should contain only design of plant offer as per Technical Specification or requirement and related paper to Technical support. Clearance Certificate during last two Financial Year work experience or any other supporting paper.
- (b) **"Financial Bid"** should contain only EMD and the Price bid quoted on the tender document as supplied by the Agency or in a separate sheet but as per format supplied.
- 3.10 **Commercial Terms and Conditions** specifically indicating deviations to the terms and conditions stipulated in detailed tender papers including payment terms etc. must be clearly specify the deviation.

- 3.11 **Basis price quoted** - The price quoted should be Firm and as per the format provided in the tender document. Price break up 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.
- 3.12 Any other particular information, which are required to be furnished as per detailed tender papers but which have not been specifically indicated.
- 3.13 The rate should be legible written in English both in figure and in words. In case of any dispute between the figure and words the letter shall be indicated.
- 3.14 Date of opening of Financial Bid shall be intimated individually to those firm who is qualified for Commercial and Technical offer.
- 3.15 The Price Bid/offer of all other who are not qualified for Technical Bid shall be returned unopened to such parties under acknowledgement. For other who qualify for Technical Bid due information shall be given through either **Phone or Fax**.
- 3.16 Earnest Money Deposit of 1% for Schedule Tribe and Scheduled Caste and backward classes and 2% for general on the amount quoted in the form of Bank Guarantee/Call Deposit/FDR from any Scheduled or Nationalized bank of India pledged in favour of Director, MNREDA, Shillong should be furnished without which Tenders will be rejected.

4. GENERAL / COMMERCIAL TERMS AND CONDITIONS :

- 4.1 **Signing of Tender Paper :** The Tender Document as issued by MNREDA should be sealed and signed by the Authorized person of the firm and it will be view as acceptance of each and every conditions containing therein.
- 4.2 **Attestation :** All Xerox supporting papers which is not original should be duly attested by the Government official not below the rank of Magistrate.
- 4.3 **VAT :** VAT Registration and VAT Clearance Certificate during last Two Financial year upto March 2010 should be furnished alongwith the Bid.
- 4.4 **Time of Completion :** The work should be completed within 180 (one hundred and eighty) days from the date of issue of final work order i.e. @ Supply of equipments to the respective site should be completed within 90 (ninety) days from the date of issue of final work order, (b) Installation and Commissioning of the Power Plant should eb completed within 90(ninety) days from the date of received of material at sites or designated Centre.

- 4.5 Supplier :** The Supplier who are not the Module manufacturer are required to produce a letter from the manufacturer of Module for commitment of supplying the Module without which offer will be rejected.
- 4.6 Trading License :** The successful bidder has to produce a Trading License from the proper authority before starting of work at sites.
- 4.7 Agreement :** An Agreement has to be signed within 7(seven) days of issue of final work order. The Agreement shall be prepared by the purchaser on a stamp paper duly signed by the authorize person of the Firm and Purchaser. The Tender Document as issued alongwith the Bid as submitted by the bidders alongwith supporting papers shall be part and parcel of the agreement. The maintenance contract agreement shall be separately signed on completion of installation and commissioning work of the system.
- 4.8 Division of Work :** The work may be allotted to more than one party so as to enable to complete the work within the set target date by the Government of India, MNRE.
- 4.9 Warranty :** The System supplied should be guarantee for a period of 2 years and the Module should be warranted for a period of 10 years. The Warranty period is from the date of complete of Installation and Commissioning of the System.
- 4.10 Test Report :** The Test Report issued by SEC/ERTL/CRPI/ETDC or any authorize Test Station Centre approved by the Government of India, MNRE for Home Lighting System Model - 2 and for Home Lighting System Model - 4 issued after April, 2008 should be submitted alongwith the Bid.
- 4.11 Payment Terms and Conditions :** The Bidders shall be entitled to the following payment terms.
- (a) Mobilization Advance : The contractor shall be paid 30% (thirty percent) of value as mobilization advance against a Bank Guarantee of equivalent / like amount from any Nationalized Bank or Scheduled valid for a period of 120 (one hundred twenty) days from the date of acceptance of work.
 - (b) 40% (forty percent) of the contract value of the plant/equipment shall be paid against receipt of materials at site in good conditions.
 - (c) 20% (twenty percent) of the contract value of the plant/equipment shall be paid on complete Installation and Commissioning.
 - (d) Balance 10% (ten percent) to be paid at the end of 2 9two) years of warranty period or against submission of Bank Guarantee of equivalent/like amount valid for a period of two years from the date of Commissioning.

(e) The Annual/comprehensive maintenance contract payment shall be made on percentage of 30%, 30% and 40% at the end of 3rd, 4th and 5th years basis.

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

4.12 Experience : The bidders are required to submit the detailed experience during the last 5 years of the work completed in any capacity of Power Plant. A Statement in this respect has to be compiled in a comprehensive form alongwith work orders by furnished column formal consisting of Sl. No., work order, Name of Organisation, No. of Power Plants, Work Value, Status as to date and completion Certificate. Due weightage will be given or considered to the bidders who have any experience especially in North Eastern Region and hilly areas.

4.13 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 not relieved the contractor from any obligation duty or responsibility under the contract.

4.14 Price Quoted : The price quoted as per the bidding Scheduled i.e. cost of the System, Transportation, Installation and Commissioning and maintenance contract should be realistic and practical in nature and conform to the actual work to be done. Any figure which is not practically practicable, offer will be rejected.

4.15 Contractor to Inform Himself fully :

(a) The Contractor shall be deemed to have carefully examined the general conditions, specification and Schedules and also to have satisfied himself as to the nature and character of the plant and equipment to be supplied and installed under the contract, the site conditions and all relevant matter and detailed.

(b) If he shall have any doubt as to the meaning of any portion of the contract/work order, he shall before signing/accepting it, set forth the particulars thereof and submit them to the Engineer-in-charge in writing in order to remove such doubts.

4.16 Financial Soundless : Documentary evidence in support of Financial Soundness of the Tenderer should be furnished.

4.17 Submission of Bids :

(a) 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) Technical design of a Power Plant.
- (iii) Technical Specification duly filled in as per Tender Document.
- (iv) Experience in Similar kind of works.
- (v) VAT Registration and clearance Certificate during the last two financial years upto March, 2010
- (vi) Any deviation with Justification thereof.
- (vii) Any other.

(b) 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 given.
- (iii) Earnest Money Deposit.

4.18 Service Centre - It is mandatory that the Manufacturer of Supplier should have a local service centre in the state and preference will be given to those Firm who have the service centre in all the 7 (seven) Districts in the State.

4.19 Exemption of EMD - The Manufacturer or Supplier who claim exemption shall have to produce a relevant paper from the proper authority.

4.20 Breach/cancellation of the contract :-

- (a) In case of non-performance in any form or change of the covenants and conditions in this contract by contractor, MNREDA shall have the power to annual, 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.
- (b) 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 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.

4.21 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 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.

4.22 Tools and Tackles :

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

4.23 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 responsible for any such accidents.

4.24 Delivery of system :-

- (i) 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.
- (ii) Notification of delivery or dispatch in regard to each and every consignment shall be made to the purchaser immediately after dispatch or delivery. The contractor shall supply to the consignee invoice in duplicate and packing account of all stores delivered or dispatch by him.
- (iii) In case of any occurrence of loss or damage in transit upto destination, it shall be liability of the contractor or 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.

4.25 Arbitration :

- (i) Except where otherwise provided if at anytime question dispute or difference whatever shall arise between the contractor and the purchaser upon or in the relation to or 1 (one) connection with this contract either of the parties may give to the other notice in writing of the existence of such a question on rejection of the matter, the dispute or difference shall be referred to the sole arbitration appointed by MNREDA at the time of dispute after ascertaining the terms of reference mutually.
- (ii) The Arbitration will preferably be a member of Arbitration Council and arbitration proceeding will take place as per provision or arbitration Act 1940 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply.
- (iii) The contractor will ensure that the work under this contract shall continue during arbitration proceeding and dispute and no payments due from or payment by the purchaser shall be withhold on account of such proceeding except to the extent which may be in dispute.

4.26 Court of Competent Jurisdiction :

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

5. TECHNICAL DESIGN & REQUIREMENTS.

5.1 INTRODUCTION :

It is proposed to install 3.0 Kwp Solar Power Plant on the School building at different places of Meghalaya for Computer and lighting load, so that the same can be used for meeting partial load of the entire building.

5.2 Project Summary :

Project at a Glance :

- (i) 3.0 kWp Stand Alone Solar Power Plant to feed the generated solar power to the load.
- (ii) **Array Capacity** : 3.0 kWp Standard Solar Panels 230 Wp at 28 Volts DC with 60 cells.
- (iii) **Battery Capacity** : 240V - 260Ah @ C10 to provide necessary backup for 8kVA load for 5 hours operation
- (iv) **Type of system** : 100% Stand Alone solar PV system with backup facility and grid charging facility.
- (v) **Control** : Microprocessor based solar inverter, consisting of MPPT control for maximizing solar input.

5.3 Technical Offer

5.3.1 **Scope of Work:**

The following section of the document describes the Solar PV Power Plant proposed for computer & lighting load powering.

This job involves by means of the enclosed specification, design, manufacture, supply, installation, commissioning of the Solar PV Power Plant with 2 years warranty period followed by 3 years operation & maintenance.

The Scope of Work shall include the following,

- ✓ Design, manufacture, supply of Solar PV Power Plant
- ✓ Detailed planning of smooth execution of the project
- ✓ Performance testing of the complete system
- ✓ Warranty of the system for 2 year faultless operation. & 5 years operation & maintenance
- ✓ After sales service

- ✓ Risk liability of all personnel associated with implementation and realization of the project
- ⇒ The module layout is proposed on the basis of clear shadow free space available at Site.
- ⇒ The proposed structures are fixed facing south at a tilt.
- ⇒ The Solar inverters, Battery Bank & junction boxes are housed inside the Control Room building.

5.3.2 System description

These photovoltaic arrays shall be connected such that maximum energy extraction from available sunlight is possible.

The Photovoltaic (PV) system consists mainly of 3 (Three) components:

- ✓ The PV array with Solar Panels connected in series & parallel
- ✓ MS Structure for PV panels
- ✓ Solar inverter

The PV array converts the light energy in to sunlight to direct current (DC) power.

The Grid connected solar inverter converts the DC solar power in to AC Power and feed to grid. Inter connecting cables are used to interconnect the Solar Modules, Junction Boxes, Solar Inverter and Grid connection.

The PV installation comprises of 230Wp PV panels.

5.3.3 Output distribution:

DC-AC Inverter converts DC energy produced by the solar array to AC energy. The inverter generates 220 V AC, 1-phase, 50Hz output

5.3.4 Earthing and Surge protection:

The array structure of the PV yard shall be grounded properly using adequate number of earthing pits. All metal casing / shielding of the plant shall be thoroughly grounded to ensure safety of the power plant. Surge protection: The SPV system shall be provided with necessary surge protection devices (Inside Array Junction Box & distribution boards) for over voltage protection. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc.

5.4. Main Components of Solar Power System

5.4.1 Solar PV Modules

The module consist of:

1. Solar PV Module :

- a) Bidder should use Solar Module of similar output with +/- 2% tolerance in single string to avoid array mismatch loss.
- b) The PV modules used in the projects will be from crystalline solar cells, 36 in series, with minimum 100 Wp capacity duly tested in Solar Energy centre. The PV modules should be manufactured in India, in an ISO:9001 and ISO:14001 certified facility, and conform to IEC:61215 Ed.2, IEC:61730-1 and IEC-61730-2 standards.
- c) 36 carefully matched 156 X 156 mm **multi / mono crystalline** silicon cell laminated between sheet of -Ethylene Vinyl Acetate (EVA) and high transmissivity 4 mm tempered glass.
- d) All solar cells are redundantly interconnected in series to increase integrity.
- e) Back layer of Polyester (clear) Encapsulant - EVA - ensures environmental protection & optimises thermal & electrical performance.
- f) The output is via heavy-duty AWG 12 (4mm²) output cables with polarized weatherproof DC rated connectors, which provide low resistance connections. This eliminates wiring errors and speeds installation.

Parameters	Specification
BIPV Module Capacity	100 Wp & above
BIPV Module type	Mono/Multi crystalline
No. of PV cells per Module	36
Cable gland at module Junction Box	Yes
Weather resistant Junction Box	IP65
Max. Temperature rise of cells under severe working conditions over Max. Ambient temp.	75 Deg C
Peak power voltage (Vmp)	17 V
Peak Power current (Imp)	7.25 A
Open circuit voltage (Voc)	20 - 21.0 V
Short circuit current (Isc)	8.33 A
Mechanical Features	
Toughened, Low iron content & High transmissivity from glass	Yes
Ethyl Vinyl Acetate (EVA) encapsulation	Yes
Clear Tedlar/Polyester tri-laminate back surface	Yes
Resistant to water, abrasion hail impact, humidity & other environment factors for the worst situation at site	Yes
By-pass diode	Yes

5.4.2 Power Conditioning Unit

The PCU consists of in-built 3 KW charge controller and inverter to supply continuous power to the dedicated load with support to the load coming either from the solar array, battery bank, Grid Power in order of preference. The PCU of 3 KW is considered for this project.

The sine wave inverter generates a sinusoidal AC voltage with an exceptionally precise voltage and stabilized frequency. The inverter is protected against overload and short circuit.

PRODUCT SPECIFICATION FOR INTEGRATED SOLAR POWER CONDITIONING UNIT

INVERTER	
Battery voltage	<ul style="list-style-type: none"> • 1 to 3KVA suitable for 48V battery bank • 4 to 6KVA suitable for 96V battery bank
Inverter type	Bidirectional & Microprocessor controlled
Inverter power rating	Continuous
Operation mode	<ul style="list-style-type: none"> • Stand alone • Hybrid & grid interactive
Output voltage	240V \pm 3%
Output frequency	50Hz \pm 0.5 Hz
Output waveform	Pure sine wave
Total harmonic distortion	<3%
Power factor	0.8
Efficiency	90% +/- 3% at full load
Over load	<ul style="list-style-type: none"> • 125% for 1 minute • 200% for 10 Seconds
Line & load regulation	<3% with full load & maximum to minimum input voltage variation
Self consumption	<2% of the inverter rating at nominal battery voltage & no load shutdown feature
AC charger rating	Minimum 50% of the solar capacity , should be capable of working 240VAC \pm 20% , 50Hz \pm 1 Hz
Isolation / Switch	Suitable rated fuse and MCCB / MCB at the battery input,solar,grid and output path
Protections	<ul style="list-style-type: none"> • Over load /Short circuit • Against lightening & over current • Output under / over voltage • Battery under / over voltage with audible alarm • Over temperature • Grid over / under voltage • Grid low / high frequency • Battery reverse polarity • Over current / surge loads

1.1 BATTERY & BATTERY BANK

- (a) The batteries should be of gelled electrolyte type, positive tubular plate, maintenance free lead batteries and shall conform to IEC/EN 60896-21 & 22.
- (b) The batteries shall be of 2V cells with end cut off voltage 1.8 per cell and battery terminal should be provided with covers.
- (c) Design voltage of system should be 48V system.
- (d) Battery capacity of each plant should be designed taken as a full rated load capacity available from the solar array with two days autonomy taking into consideration.
- (e) Batteries should be provided with explosion proof vent plugs with complete assembled set.
- (f) The batteries shall be suitable for recharging by means partial state of charge.
- (g) Bidder shall mention the design cycle life of batteries at 80% depth of discharge at 27 degree C. Details for 20% DOD shall be provided.
- (h) The batteries shall be designed for operating in ambient temperature of site.
- (i) The battery container shall be made of polypropylene.
- (j) The self discharge of batteries shall be less than 3% per month at 20 degree C and less than 6% per month at 30 degree C.
- (k) The batteries shall consist of individual cells, which can be carried separately with case while transporting.
- (l) Bidders to specify capacity & end cell voltage at different discharge rates.
- (m) Battery rack & accessories.

Battery interconnecting links shall be provided for interconnecting the cells in series and in parallel as needed. Connectors for inter cell connection (series/parallel) shall be maintenance.

(n) **Specification should consist of :**

- (i) Manufacturer :
- (ii) Type battery :
- (iii) Nominal voltage :
- (iv) End cell voltage :
- (v) Capacity of battery system :
- (vi) Depth of discharge :
- (vii) Efficiency of battery :
- (viii) Duty cycle :
- (ix) Combination of battery series and parallel : Yes.
- (x) Structural details : As per product leaflet.
- (xi) Battery guarantee :

5.4.3 Junction Boxes

The junction boxes shall be dust, vermin, and waterproof and made of Thermo Plastic. The terminals shall be connected to copper bus-bar arrangement of proper sizes. The junction boxes shall have suitable cable entry points fitted with cable glands of appropriate sizes for both incoming and out going cables.

Parameters	Specifications
Type	FRP / ABS / Polycarbonate
Construction	Dust, Water & Vermin proof
Earthing Provision	Shall be Provided
Hardware	Shall be Provided as required (SS Hardware)
Mounting	Structure Mounting
Protection	IP 65

5.4.4 Cables

The size of the cables between array interconnections, array to junction boxes, junction boxes to Inverters etc shall be selected to keep the voltage drop and losses to the minimum. This drop shall not exceed 5% of system capacity.

The bright annealed 99.97% pure bare copper conductors that offer low conductor resistance, they result in lower heating thereby increase in life and savings in power consumption shall be used. These wires shall be insulated with a special grade PVC compound formulated and manufactured in-house. The skin coloration offers high insulation resistance and long life.

Parameters	Specifications
Type	PVC insulated and Sheathed
Material	Copper
Working voltage	Up to 1100 V
Test voltage	650V/1.1kV
Color	To suit Red, Black, Blue
Temperature	-15 Deg C to +70 Deg C
Standard	IS 1554 / 694-1990

5.4.5 Module Mounting Structure :

The module mounting structure is designed for holding suitable number of modules in series. The frames and leg assemblies of the Module Mounting structure are manufactured using standard Mild Steel sections of angle, channel, tubes and any other sections conforming to IS: 2062. These structures are hot dip galvanized for the long life in external weather conditions. All fasteners used for the structure assembly is of very good quality Stainless Steel (SS304). The Module mounting structure is designed in such a way that it will occupy minimum space without sacrificing the output from solar modules at the same time it will withstand severe wind speed up to maximum 150 KMPH (horizontal wind speed).

5.4.6. ACDB with Energy Meter :

The ACDB shall act as central connection point to all inverters, UPS and Electricity supply. It will have Load Limiter Switch for each channel & type of load. Load limiter switch will have the facility to set the load at step of 200 watt upto a maximum of 800 watt. Such three load limiter circuit will be provided.

5.4.7. Non-Module Manufacturer :

The Firm who are not the Module manufacturer are required to furnished a Certificate from the Module Manufacturer a letter of support that they are to supply the Module valid for one year from the date of opening of Bid along with relevant Test Report of Modules as desired.

5.5. Bill of Materials

3.0 kWp Solar PV Power Plant			
BILL OF MATERIALS			
Sl. No.	DESCRIPTION	TOTAL QTY.	UNIT
1	BIPV Solar Module - 125 Wp	24	nos
2	08 Module Mounting Structure	1	Set
3	Array Junction Box (4:1)	1	set
4	3 KW Power Conditioning Unit 48V DC I/P, 220 V AC, 50 Hz, 1 Phase o/p	1	set
5	Battery Bank - 48 V -640 Ah @ C10	1	set
6	AC Distribution Board & Battery Protection Panel	1	no
7	Cables	1	set
8	Earthing	1	set
9	Lightning Arrestors	1	set
10	Installation kit	1	set

As per the design provided the quantity should be specify.

**MEGHALAYA NON-CONVENTIONAL
&
RURAL ENERGY DEVELOPMENT AGENCY**

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

*Tender Document for Design, Manufacture, Supply, Installation, Testing &
Commissioning, Operation and Maintenance 170 Nos. of 3 KW Solar
Photovoltaic Power Plant Stand Alone Systems at Different Institutions in
Meghalaya*

Tender document issued to M/S _____
_____ against application
vide letter No. _____ dated _____
and against payment of Rs. 10,000/- (Rupees ten thousand) only vide Cash/Bank Draft
No. _____ dated _____
of _____ Bank towards cost of Tender Document.

**PART – ‘B’
FINANCIAL BID
(Page No. 27)**

Issued By :

For Director
Meghalaya Non-Conventional & Rural
Energy Development Agency

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6. **BIDDING SCHEDULED : 3 KW SPV POWER PLANT**

Sl. No.	Description	Quantity	Unit	Unit Price (Rs.)	Total Price (Rs.)
1.	Solar Modules				
2.	Module Mounting Structure				
3.	Array Junction				
4.	Main Junction Box				
5.	D.C. Distribution Board				
6.	Power Conditioning Unit				
7.	Tubular Battery				
8.	Battery Bank Accessories				
9.	A.C. Distribution Board				
10.	Interconnecting Cable				
	(i)				
	(ii)				
	(iii)				
	(iv)				
11.	Earthing Kit				
12.	Lighting Kit				
13.	Installation Kit.				
14.	Manual Toggle Switch				
15.	D. G. Set				
16.	Distillation Plant				
	Total price of system				
17.	Control Room				
18.	Fencing or modules/power house station				
19.	Freight, Insurance etc.				
21.	Installation & commissioning				
22.	O & M charges for 2 years.				
	Grand Total				

- Note :** (i) Interconnectivity cable size & quantity should be provided.
(ii) Control room, provision for one room for operator should be made accordingly.
(iii) Distribution cable system, load & cabling for load for under the scope of MNREDA.

Dated :

**Seal & Sign of Authorised
Person of the Firm**